

Morrow Owners' Review

VOLUME 2, NUMBER 2, APRIL 1985



THE INTERNATIONAL MAGAZINE FOR USERS OF MORROW COMPUTERS
P.O. BOX 5487, BERKELEY, CA 94705 (415)644-2638

They said it couldn't be done. Borland Did It. Turbo Pascal 3.0

The industry standard

With more than 250,000 users worldwide Turbo Pascal is the industry's de facto standard. Turbo Pascal is praised by more engineers, hobbyists, students and professional programmers than any other development environment in the history of microcomputing. And yet, Turbo Pascal is simple and fun to use!

	TURBO 3.0	TURBO 2.0	MS PASCAL
COMPILATION SPEED	8.1	16	206
EXECUTION SPEED	9 ^{SEC}	13	20 ^{SEC}
CODE SIZE	12 K	22 K	35 K
BUILT-IN INTERACTIVE EDITOR	YES	YES	NO
ONE STEP COMPILE (NO LINKING NECESSARY)	YES	YES	NO
COMPILER SIZE	39K	100	300K+
TURTLE GRAPHICS	YES	YES	NO
BCD OPTION	YES	YES	YES
PRICE	\$69 ⁹⁵		\$295 ⁰⁰

The best just got better: Introducing Turbo Pascal 3.0

We just added a whole range of exciting new features to Turbo Pascal:

- First, the world's fastest Pascal compiler just got faster. Turbo Pascal 3.0 (16 bit version) compiles twice as fast as Turbo Pascal 2.0! No kidding.
- Then, we totally rewrote the file I/O system, and we also now support I/O redirection.
- For the IBM PC versions, we've even added "turtle graphics" and full tree directory support.
- For all 16 Bit versions, we now offer two additional options: 8087 math coprocessor support for intensive calculations and Binary Coded Decimals (BCD) for business applications.
- And much much more.

The Critics' Choice.

Jeff Duntemann, PC Magazine: "Language deal of the century . . . Turbo Pascal: It introduces a new programming environment and runs like magic."

Dave Garland, Popular Computing: "Most Pascal compilers barely fit on a disk, but Turbo Pascal packs an editor, compiler, linker, and run-time library into just 39K bytes of random-access memory."

Jerry Pournelle, BYTE: "What I think the computer industry is headed for: well documented, standard, plenty of good features, and a reasonable price."

Portability.

Turbo Pascal is available today for most computers running PC DOS, MS DOS, CP/M 80 or CP/M 86. A XENIX version of Turbo Pascal will soon be announced, and before the end of the year, Turbo Pascal will be running on most 68000 based microcomputers.

An Offer You Can't Refuse.

Until June 1st, 1985, you can get Turbo Pascal 3.0 for only \$69.95. Turbo Pascal 3.0, equipped with either the BCD or 8087 options, is available for an additional \$39.95 or Turbo Pascal 3.0 with both options for only \$124.95. As a matter of fact, if you own a 16-Bit computer and are serious about programming, you might as well get both options right away and save almost \$25.

Update policy.

As always, our first commitment is to our customers. You built Borland and we will always honor your support.

So, to make your upgrade to the exciting new version of Turbo Pascal 3.0 easy, we will accept your original Turbo Pascal disk (in a bend-proof container) for a trade-in credit of \$39.95 and your Turbo87 original disk for \$59.95. This trade-in credit may only be applied toward the purchase of Turbo Pascal 3.0 and its additional BCD and 8087 options (trade-in offer is only valid directly through Borland and until June 1st, 1985).

(*) Benchmark run on an IBM PC using MS Pascal version 3.2 and the DOS linker version 2.6. The 179 line program used is the "Gauss-Seidel" program out of Alan R. Miller's book: *Pascal programs for scientists and engineers* (Sybex, page 128) with a 3 dimensional non-singular matrix and a relaxation coefficient of 1.0.

TURBOPASCAL

NOT COPY-PROTECTED

Available at better dealers nationwide. Call (800) 556-2283 for the dealer nearest you. To order by Credit Card call (800) 255-8008, CA (800) 742-1133

Carefully Describe your Computer System!

Mine is: ☐ 8 bit ☐ 16 bit ☐ MS-DOS ☐ CP/M 86

I Use: ☐ PC-DOS ☐ CP/M 80 ☐ CP/M 86

My computer's name/model is: _____

The disk size I use is:

☐ 3 1/2" ☐ 5 1/4" ☐ 8"

Name: _____

Shipping Address: _____

City: _____ Zip: _____

State: _____

Telephone: _____

For update:
original Turbo
disk must
accompany
order

YES! I want the Best!

Please send: Quantity

Pascal 3.0 \$ 69.95 _____

Pascal w/8087 \$109.90 _____

Pascal w/BCD \$109.90 _____

Pascal w/8087 & BCD \$124.95 (SAVE \$24.90)

*These prices include shipping to all U.S. cities. All foreign orders add \$10 per product ordered.

Subtotal (CA 6% tax) _____

Trade-in Credit Claimed: _____

Amount Enclosed: _____

Payment: VISA MC BankDraft Check

Credit Card Expir. Date: _____

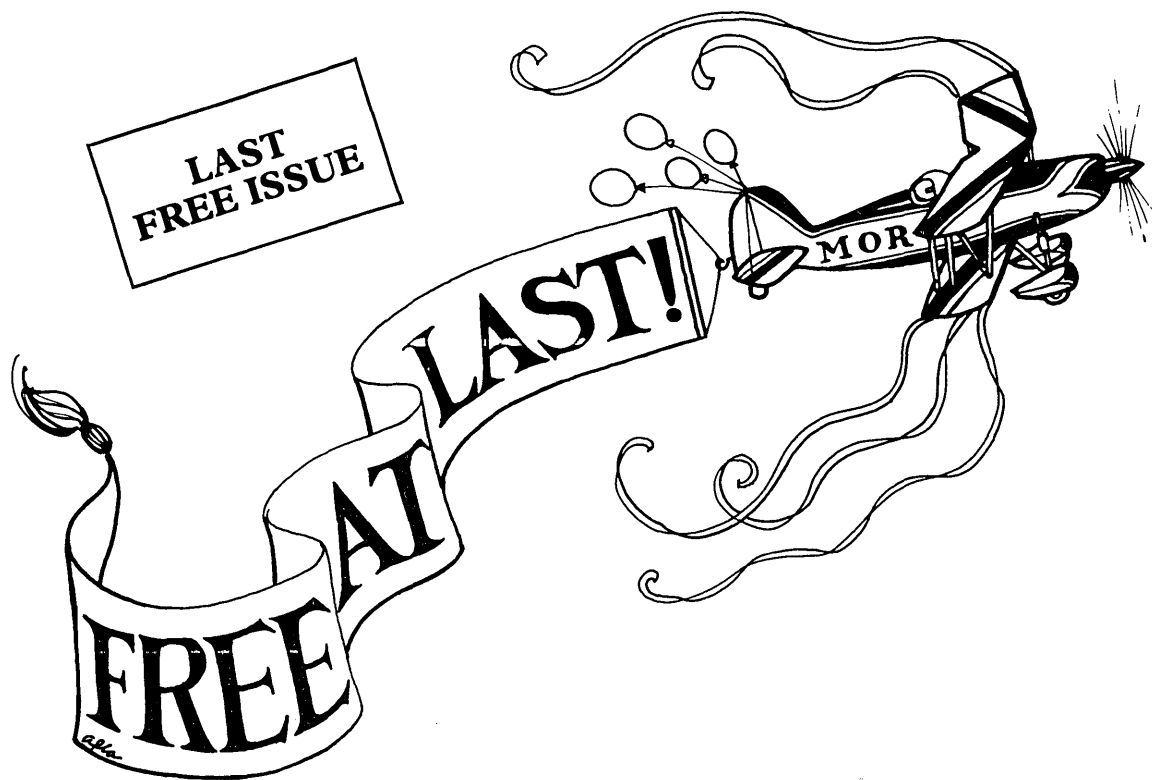
Card #: _____

32

COD's and Purchase Orders WILL NOT be accepted by Borland. California residents: add 6% sales tax. Outside USA: add \$10 and make payment by bank draft, payable in US dollars drawn on a US bank.

BORLAND
INTERNATIONAL

Software's Newest Direction
4585 Scotts Valley Drive
Scotts Valley, CA 95066
TELEX 172373



... if you pay for it

SUBSCRIBE? Yes, indeed! The Morrow Owners' Review is going independent. Since our beginning, Morrow Inc. has paid the printing and mailing bill. This allowed us to distribute MOR to you free of charge, but now it's time to take off . . . so tighten your seatbelts.

Here's our Flight Plan: Free distribution of MOR will end with the April 1985 issue. Our first solo flight will be the June 1985 issue, mailed out only to paid subscribers. Tickets go for \$18/year, two years for \$32.00. We hope you're on board.

More than ever, the independent MOR will be *your* magazine, with new departments and features to respond to your needs. Beginners as well as technical wizards can count on MOR for continued quality in how-to articles, reviews, hot tips, tutorials—information you can't find elsewhere. Our columnists will answer those questions you're too embarrassed to ask at your local users group. And all this for less than a box of cheap floppies!

But it's going to take all of us to get this flight off the ground. Got the ticket?

SUBSCRIBE TO MOR!

☐ **Yes, I am willing to get MOR free by paying for it!**

Name _____

Address _____

City _____ State _____ Zip _____

☐ One year for \$18.00

☐ Two years for \$32.00

☐ **GIFT SUBSCRIPTION SPECIAL:** \$16.00/year
(due by June 15, 1985)

"My year is no longer divided into 12 MONTHs but 6 MORs!"
— Harry Barber

Send check to **Morrow Owners' Review**
Box 5487, Berkeley, CA 94705, Attn: Subscriptions

SPECIAL MAILING COSTS: For First Class, add \$10/yr. for US, Canada & Mexico. For all other countries, add \$10/yr., for surface mail, add \$40/yr. for Airmail.

EDITORIAL

by Sypko Andreae

Well, this is your last free issue. From now on it is going to be entirely your magazine: written by you, supported by your subscriptions (and the display ads), and produced by our tiny MOR staff.

Ever wonder how each issue comes together? Let me take you on a "tour of the kitchen." By now you're familiar with the main cooks in the production effort of MOR: the halftime staff in Berkeley, California, an Editorial Council and an ever growing international group of authors. Dana and Shoshana--that is two thirds of the regular staff--do receive hourly compensation for their efforts. Your Editor has a part time job as a programmer and won't be paid for his efforts at MOR until it is financially on its feet.

Revenue from display advertising covers about 35% of our expenses. Each issue contains about 40% display ads and 60% editorial material. Dana coordinates all the display ad sales and administration. About nine weeks before each issue of MOR, she sends out promotional copies and a rate schedule to potential advertisers and follows up with phone calls.

Where does the rest of the needed revenue come from? It used to come from Morrow Inc., but they don't pay our printing and mailing bill anymore. In the future it will be from you, our subscribers. Currently our bills are covered by a loan which will have to be paid back during the first subscription year. Sounds a little scary, doesn't it? We agree. However, I have this uncanny feeling that it's going to work out somehow. May you all feel as motivated as those noisy BAMDUAns you see on this issue's cover. We'll know by June. . .

Everyday it seems an article or two arrives in our office--on floppies in the mail, over MCI mail or via the BAMDUA RBBS. Each article gets a file name and is transferred to the hard disk of the MD16. Ah yes, we recently received an MD16 from Morrow, Inc. In lieu of their financial support, Morrow gave us this machine--an indispensable tool for managing a subscriber magazine. Thanks to John Seamster, our Morrow liaison, who made the arrangements for this gift.

Six weeks before the deadline, we make our first selection of articles. In their unedited form they are transferred to floppies and sent to the Editorial Council (you can find their names on the Contents page). The members of the council not only rate the articles on a scale of 1 to 10, they also write short critiques in which they evaluate, make suggestions for improvements and bring up technical questions, holding for a rewrite. They do a marvelous job, often in very

little time; the increase in quality of MOR is in part due to their generous efforts.

Then the editing process starts in earnest. And hard work it is. The articles are gone over with a fine-toothed comb. Some are returned to the authors with editorial suggestions along with the council feedback; other articles are shelved for a later issue. Shoshana and I work long days and late nights to transform the material into what we hope is technically accurate information and clear, easy-to-read English.

Production week is the most exciting of all. Shoshana, the only one of us with experience in publications, doubles as production manager in our crowded little office during those long days of work. Big mock-up boards hang on our office wall for page planning. Throughout the course of production, articles and ads get shuffled around a number of times--up to the last intense minute sometimes. We take turns running to the typesetter, make repeated visits to the copy shop, and keep the printer clattering. The mail piles up (all those subscriptions!), and sometimes the phone even gets turned over to the answering machine in lieu of driving us crazy. In the end, we've cooked up a brand new issue of MOR. Exhausted, we bring our camera-ready mechanicals to the printer who always declares--rather paternally--how every time we do so much better.

In a few days the "blue line" is ready, a test copy on light sensitive paper that smells of ammonia. In the early days, we learned the hard way that you should not read it in the sunlight or it will disappear in a blue haze before your very eyes. This is our last chance to make corrections. The press run takes about a week and a half. Another three or four days are taken up by the mailing house. The Post Office then deals with our truckload of MOR in the most mysterious ways. Some readers receive their copy within a matter of days, others--especially those on the East Coast--receive it after two or even four weeks. As for our readers in Australia, Europe and elsewhere. . .who knows? That is why quite a few people pay the extra expense to receive their copy by air or first class mail. Depending upon where you live, that may be a good idea. The other day we received a letter from a reader in Borneo full of praise for what seemed like our second issue. . .

Each meal's main ingredient is the loving attention with which it is prepared. For those of us who contribute articles, feedback and the time it takes to create a magazine, MOR is in fact a labor of love. May it nourish all of us.

CONTENTS

EDITORIAL EXCHANGE

Editorial	2
Letters to the Editor	5

COLUMNS

INSIGHT: Paying Bills with Personal Pearl...Again . . . Art Zemon	11
From The Mailbox	16
David's Q & A Column	21

FEATURES

PILOT Programs for Children	Art Kazmerczak	7
Morrow Drive Error Messages.	Blake Handler	18
MDBITS, a Program to Replace SETBAUD	Stan Young	20
SUBMIT to Less Work	Kenneth J. Grymala	27
Saving Time in SuperCalc with X(e)ecute)	Don Roszel	30
MEX, A Great PD Modem Program	Dee Pourciau	31
The Morrow Toolbox	David Mintie.	35
Automatic Formatting with PILOT	Charles T. Tart	38

REVIEWS

SOFTWARE: UniForm, a File Transfer Utility	Tim Evans	23
BOOK: <u>The CP/M Plus Handbook</u> by Alan R. Miller	Kenneth J. Grymala	26

MISCELLANEOUS

Classifieds	39
List of Advertisers	40

Morrow Owners' Review

P.O. Box 5487, Berkeley, CA 94705
MCI Mail: MREVIEW (ID 217-1566)
(415) 644-2638 <== NEW NUMBER

Bi-monthly distribution (last free issue)
Next issue early June 1985

Editor and Publisher: Sytko Andreae

Managing Editor: Shoshana Tembeck, Administrative Assistant: Dana Gaskin, Graphics: A. Lucas-Andreae
Advertising and Layout: Dana Gaskin, Design: Augusta Lucas-Andreae & Shoshana Tembeck
EDITORIAL COUNCIL: Stan Ahalt, Clarence Heier, Andy Adler, Michael Conroy, Tim Evans,
Bruce Gowens, Brian Leyton, Ted Silveira, Erik Westgard, Stan Young, Art Zemon

DEADLINE FOR DISPLAY AND CLASSIFIED AD COPY
For June 85 issue: Friday, May 3, 1985, noon
For August 85 issue: Friday, July 5, 1985, noon
For October 85 issue: Friday, September 6, 1985, noon

WRITERS GUIDELINES: Note in your article which machine (Rev.) you are referring to. All written contributions of more than 30 words should be submitted in a WordStar file; right margin at 55 (^OR = 55); right justification OFF (^OJ); two spaces after the period (end of sentence); one blank line between paragraphs; three spaces indent at the beginning of each paragraph. Thank you! Preferred file transfer: Upload to BAMDUA RBBS, (415) 654-3882. You may also use MCI Mail: MREVIEW (ID 217-1566) or mail a 5 1/4" Morrow format floppy with a printed (double-spaced) hardcopy of your prose. If you enclose postage, your floppy will be returned.

CLASSIFIED ADS are available for both private parties and commercial enterprises. Private party ads cost \$2

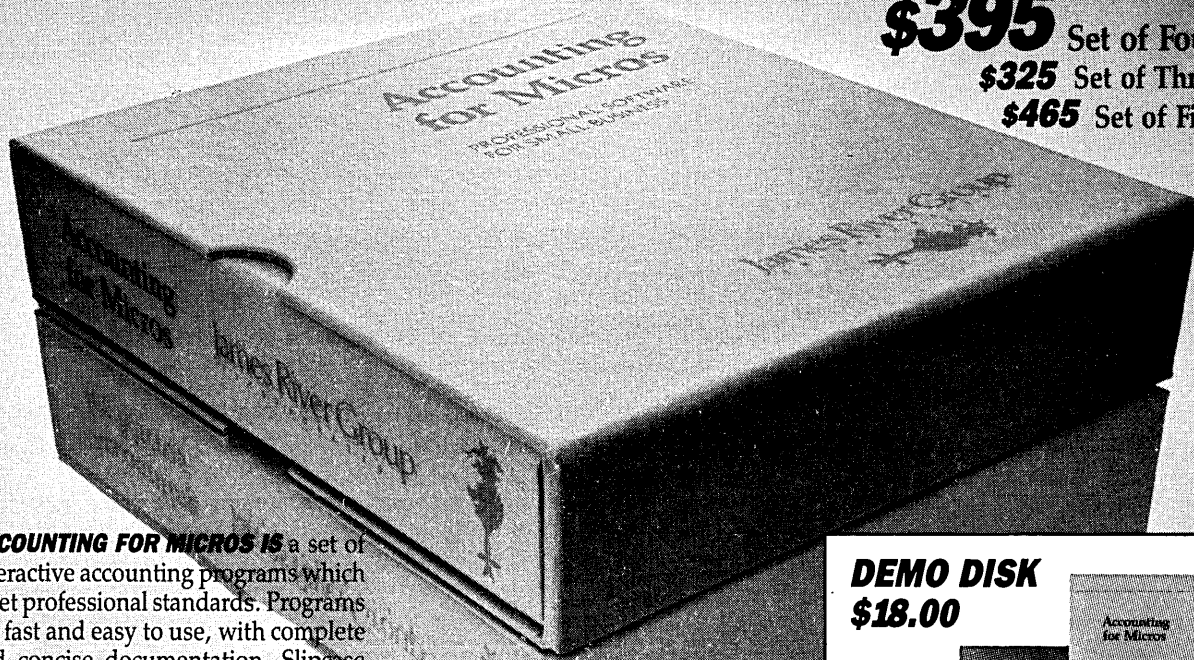
per line; commercial ads run \$6 per line. All ads which sell something for profit are considered as commercial. Guidelines for both types of ads are: maximum 50 characters per line; maximum of 6 lines per ad. Be sure to include name, address and phone number. Indicate which information should not be printed.

For information on DISPLAY ADS, write to MOR, P.O. Box 5487, Berkeley, CA 94705, and ask for rate schedule and information sheets.

SPECIAL CREDITS

Front cover	—	Jeff Weissman
Morrow Liaison	—	John Seamster
Cartoons on pages 11,16	—	Robert Johnson
Cartoon on page 18,19,40	—	Augusta Lucas-Andreae
Drawings on pages 13,24,26	—	Fred Rheinfrank
from <u>Overcoming Computer Fear</u>		
© Jeff Berner		

ACCOUNTING FOR MICROS



\$395 Set of Four
\$325 Set of Three
\$465 Set of Five

ACCOUNTING FOR MICROS IS a set of interactive accounting programs which meet professional standards. Programs are fast and easy to use, with complete and concise documentation. Slipcase and binder manual also includes valuable tutorial information on bookkeeping and general small computer use.

GENERAL LEDGER \$125

Allows up to 1,000 accounts & 1,000 transactions/month. Retains mo/end balances for Last year, This Year and Forecast. Includes Cash Disbursements, Cash Receipts and General Journals. Reports include Balance Sheet, Income Statement, Annual Summaries and Journal Reports.

ACCOUNTS RECEIVABLE \$125

Allows up to 2,500 customers and 1,000 invoices per month. Invoicing can access Inventory Module. Keeps customer names and addresses. Invoice prints on plain paper or any pre-printed form. Statements can be printed at any time.

ACCOUNTS PAYABLE \$125

Allows up to 500 vendors and 600 invoices/mo. Records invoices and handwritten checks. Prints computer checks on any pre-printed form. Keeps vendor names and addresses.

INVENTORY \$125

Allows up to 6,000 parts. Keeps 3 month history of unit sales as well as year to date. With AR, can be used as point of sale system (prints invoices, handles cash). Reports include Inventory Value and Stock Report, Internal and Customer Price List.

PAYROLL \$125

Will handle up to 100 employees with six deductions per employee. Deductions may be determined as fixed dollar amounts or percentages, or referred to a table for automatic look-up. Tax tables are easily entered, or purchased separately.

SET OF FIVE \$465

SET OF FOUR \$395

SET OF THREE \$325

PROGRAMS RUN ON MOST CPM AND MSDOS MACHINES

Apple CPM
 Columbia
 Compaq
 Corona
 Cromemco
 Eagle
 Epson QX-10
 IBM PC, XT, PC Jr, AT

Kaypro II, 4&10
 Morrow MD2,
 MD3, MD11
 Osborne I &
 Executive
 Otrona
 Panasonic
 Radio Shack CPM

Sanyo
 Tandy 1200 HD
 Tandy 2000
 TeleVideo
 Xerox 820 5"
 8" CPM
 Other CPM or MSDOS

**DEMO DISK
 \$18.00**



Try all 5 programs, order our DEMO DISK for \$18.00 (includes shipping). Condensed versions of the programs will give you the "feel" of both data entry and access. Includes sample reports and instructions.

Available direct, from computer dealers, and some B. Dalton Bookstores.

ORDERING: Please specify machine and density. Send check or money order, or use your VISA or MasterCard (please supply expiration date as well as account number). Price includes shipping (MN residents add 6% sales tax). Your order will be shipped by return mail. C.O.D. add \$2.00 per order.

James River Group
 INCORPORATED



125 North First Street
 Minneapolis, MN 55401

**OR ORDER BY PHONE
 (612) 339-2521**

LETTERS TO THE EDITOR

DON'T GO SLICK, PLEASE

Dear Editor:

In your last Editorial (MOR Vol. 2, #1), you said: "Any money left over will be ploughed right back into MOR to enhance quality, size or frequency."

But the quality is just right! Do not get the magazine too slick. Don't get it too big--I have stopped reading most journals that I used to enjoy because they became so professional that I did not have time to wade through all the material.

I like MOR because it gives me what I want briefly, to the point, and without philosophy, discourse, or fancy entertainment. To sacrifice that in favor of size or frequency would, in my opinion, be a mistake.

The commitment to more and more readers, more and more advertisers, and more and more space presents serious cash flow problems, and on this petard have blown many now defunct journals.

If you get any extra money, put it into a bank account, and keep it until the day you feel that you need to raise the subscription price--then use the money to keep the price down.

Fredric Schlamp, Sacramento, CA

UNETHICAL BUSINESS PRACTICES

Dear Editor:

Sure do like your publication, look forward to each issue and read every word. Now, for the zinger...

I'm a little tired of the constant explanations about Morrow's policy of no support. I've been told, I understand, and I accept. I admit that when I purchased my MD2 in 1982, no mention of support was made by Morrow in either their advertisements, their warranty, or by any representative of the company. Now that I have been stuck, please do not continue to rub it in. Every issue of your publication devotes a considerable amount of space to this subject. I get the hint, let's go on to other matters.

For example, my non-functional function keys on my MDT20. Morrow claims that if they are to stay in business, they cannot sell at the low prices they provide, and still "hold your hand" with technical support. But, making false claims and selling a product that will not operate is not conducive to staying in business either. They never promised

technical support, but they did promise function keys and documentation. The state of California has implied warranty laws to cover just such unethical business practices.

J. Robert Nieters, Van Nuys, CA

HIT AND RUN ORPHANS

Dear Editor:

I am increasingly upset about the way Morrow has "orphaned" the Morrow Owners' Review and the people who bought their machines. In a global sense, I feel that hit and run hardware manufacturers should be thoroughly scorned and not allowed to foist their unsupported machines off on the public. When it became apparent that Morrow was not going to "telephone support" their products, I felt that they could at least morally justify their decision via the support for MOR. We should go independent, but the tactics that have been used by Morrow are reprehensible.

Recent interviews that have appeared in the trade rags have indicated that Morrow is poised for a leap at the MS-DOS and Unix world, but intends to finance such a move on the backs of their 8-bit customers. We must stop this cavalier treatment of the people who have plopped down umpteen dollars and then found themselves with outdated (but still immensely useful gear).

Stan Ahalt, Clemson, SC

PERMANENT INFORMATION SOURCE?

Dear Editor:

I just got my first copy of MOR (Nr. 5), and I am enthusiastic. You can imagine that owner support is even more unreachable on this side of the ocean, as we have to go through considerable obstacles: language, borders, distance, time delays, peoples and companies that don't even answer (not Morrow), and so on. . .

I feel like I am missing a lot of information in previous issues and local users groups' newsletters. I think all this should be made permanently available, especially to the newcomer like me. An electronic library would in this case not serve, since the novice doesn't start with a modem and wouldn't know how to use it.

Beat Streckeisen, Severy, Switzerland

[Most of the information is available. For \$3 you can get each back-issue of the Morrow Owners' Review; many clubs will sell back-issues for a nominal sum. See listing of Morrow Users Groups in December 1984 MOR.]

FROM THE WILDS OF BORNEO

Dear Editor:

I am a Decision 1 owner, out in the wilds of Borneo [literally!], and I saw the note in October '84 Byte concerning the Morrow Owners' Review. I would be most interested to get details on MOR and any back numbers with information on hardware/software for the Decision 1.

Needless to say, I've had a lot of trouble getting support out here and I often feel that Morrow doesn't really care whether my system works or not. From a recent letter in Byte this impression may not be unique!

Steve Rackley, Lutong, Sarawak

COOL IT WITH A BETTER FAN

Dear Editor:

I noted that my MD11 seemed to be getting terribly hot. Although I did not measure the temperature, with the machine on for about 30 minutes a floppy disk would be about as warm as a hot muffin. Then I saw that Ken Grymala had written "Cooling a Hot Computer" in the December-January 1985 issue of Micro-Cornucopia in which he detailed the problem and recommended a solution. As he suggested, I replaced the fan and the overheating does not appear to be a problem now.

I understood that Morrow had designed a 16-bit upgrade to the MD11, but then heard that there were problems apparently due to excessive heat causing component failure. What is the status of this upgrade, is it being sold, and does it work?

Thanks for your effort in publishing the MOR; I would not be upset if you had to charge for the subscription.

David Pate, Mobile, AL

[Yes, Morrow tells us there were heat problems with the MDCP88 co-processor board when used in the MD11. You may still be able to buy it somewhere, but Morrow does not recommend it anymore. --Ed]

SMARTING ABOUT MODEMS

Dear Editor:

In October of 1984, I purchased an MD5-E from Computer Conventions in San Francisco. I found this "mini-hard disk" system a delight to use. Although I've had no experience with computers, within the first week I was doing all kinds of complicated stuff almost without effort.

I also purchased a Morrow SmartModem with the ReachOut software. Even after changing the variables in the installation program, all ReachOut ever gave me was a title page display and a frozen keyboard.

So, back to the dealer with the Morrow SmartModem and ReachOut and back home again with a Hayes SmartModem and a program called Commx. But Commx gave me menus and would not dial. So much for this round of "getting on-line with the world."

I'm reluctantly forced to the conclusion that this modem problem is Morrow's fault. It was their responsibility, at the minimum, to inform their dealers that the Morrow SmartModem will not work on the MD5-E, period. It was, and is, their responsibility to specify exactly what kind of cable is needed to connect the MD5-E with the Hayes SmartModem. Beyond that, you'd think they would want their own modem(s) to work properly on their own systems and do whatever is necessary to make sure that happens. Guess not!

Edward Clark, San Fransisco, CA

[Lots of us use Hayes, Promodem 1200, and other modems on MD5, MD11, MD16 or MD34, working off the auxilliary port, using Public Domain software, and love it. The software (MODEM7 or MEX) is available from Morrow Users Groups or their RCP/M bulletin boards. --Ed.]

ON-LINE WITH THE IBM WORLD

Dear Editor:

I am interested in communicating with any of our readers who, like myself, may be telecommunicating with an IBM mainframe. After six months I have been able to work out routines for getting the function keys on my MD3 to emulate all 24 of the IBM keys: to move the cursor, do high-speed file transfer and the like.

I'd be willing to serve as an information exchange, if there is a need for such a thing. Please send disks, if you can, and I will make every effort to respond to all people within the first month, letting them know what information has come in and how they can get copies of it.

I am a professional journalist who works for Brown University fulltime and does editorial consulting parttime. If you or others are doing the same kind of linking up by modem with their campus or office mainframe, let's get together and solve some of our mutual problems.

Don DeMaio
8 Annawamscutt Road
Barrington, RI 02806

[Thanks! --Ed.]

PILOT PROGRAMS FOR CHILDREN

by Art Kazmerczak

When we bought our computer, we found there was no educational or game software available in our area for a precocious four-and-a-half-year old whose only question at the time was, "Daddy, can I use your computer?" It didn't seem to matter that she already had a VIC-20 computer for her own use, she wanted to use Daddy's. I knew I had to write some programs for her or I would never get any peace, either from her or her mother.

Then I began to ask myself how many other parents looking towards buying a computer might also be somewhat discouraged to find little in the way of game or educational software available for their children. How many of these parents are prepared to sit down and write the programs themselves?

Figuring that there were probably many in this situation, I wrote a book (as yet unpublished) to provide some simple programs that their children could start on and to guide them in writing more programs on their own.

Of course there are those who would rather buy one of the small, inexpensive color computers for their children and whatever commercial educational software they can find for that computer. Some of us, however, still see a serious drawback in doing this. Commercial software is written for the "average" child. But who is this "average" child? I've never met an "average" child. My daughter is certainly not "average." Each child is a unique person, with his or her own strengths and weaknesses, and their own special educational needs. It is my express purpose in writing this article to show parents how to write educational software, so they can tailor programs to their own child's individual level of development.

The programming language used is PILOT--Programmed Inquiry, Learning Or Teaching--a popular dialogue language becoming rapidly available on many computers running under the CP/M operating system. The program in this article was written using a PILOT version written for the Morrow computer. Most versions of PILOT are very similar, and anyone who can learn the language, even for another computer, should be able to read and understand this program.

Hopefully, parents can use this article to gain an insight into how the programs operate and then, using their PILOT manuals, begin to write their own. Please feel free to use the program in this article as you wish--copy it, change it. . . . Once you understand the ideas, you can write your own.

The program I'm presenting in this article is called "Find the Letters." This is an educational program for the very young (preschoolers). It helps the child learn the letters of the alphabet and the integers from 0 to 9. An added benefit is teaching the

child her way around the keyboard. We started out by reading the screen text to her and working side by side. She was so excited by the game that soon enough she began reading the text herself!

Find the Letters

For this program, we took the twenty-six letters of the alphabet and the ten integers 0-9 and made up seven different sets of letters and numbers. The first six sets contain five letters or numbers while the seventh set contains six letters or numbers. The reason we divided the letters into sets is the short attention span of children. I felt that asking a child to work through all thirty-six letters at one sitting would be a little taxing. Working through a set of five letters isn't nearly as demanding. The program allows the child to quit the program or change sets at any time. The program also allows the child to choose which of the seven sets she wants to work with. This would let the child play with a different set of letters each time she wants to play and relieve some of the boredom and demands of working through one big set of letters.

The things to look at in this program are the instructions A: for answer, and how that answer is used to match a desired answer in the M: instruction. If the answer does not match, then we use the "Jump on No" instruction JN: to go to a subroutine to print a message. If the answer given by the child matches the expected answer, then no subroutine is called and the program flow goes to the next line of the program. The use of labels in the JN: instruction tells the computer where in the program to go to continue execution.

The A: instruction is used, in some cases, to save the answer to a question for later use, as in line 8, A: \$NAME. This saving of answers leads to another idea helpful in writing individualized programs. In this program, the computer asks for and saves the child's name. This variable can then be used in later messages to address the child by name, making the computer appear to be more friendly.

The most important concept in this program is the use of subroutines. A subroutine is a short section of code that is usually used many times in a program. A subroutine allows the person writing the program to write the portion of the program only once and then call that section of code whenever needed.

Proceeding to the program itself, lines 15-19 try to present the program as a game in which a child can try to get as many stars as possible. But stars are only awarded for correct answers. We haven't hinted that the child is going to have to learn something.

Lines 25-28 demonstrate more foolproof programming. In order to go further, the child has to

represent a valid choice, the program repeats the last message and lets her try again. Lines 56-69 show the use of the JY: instruction to go to the correct point in the program depending on which set is chosen by the child.

Lines 71-80 show the basic structure of displaying a question, a letter, accepting an answer, checking its correctness and then using subroutines and branches to continue processing. The UY: *RIGHT is the use of a subroutine call. The program goes to a section labeled

[The PILOT program listing is quite long and by its nature quite repetitive. That is why we printed the beginning and the end and left the middle part out. You could possibly figure out for yourself what is in between, but that is tedious. As a service to subscribers, MOR will send you the PIL (PILOT Code) file if you send us a self addressed floppy mailer with a floppy.]

```
61: JY: *SET3
62: M: 4
63: JY: *SET4
64: M: 5
65: JY: *SET5
66: M: 6
67: JY: *SET6
68: M: 7
69: JY: *SET7
70: *SET1
71: *NO1
72: U: *OPEN
73: T:( A )
74: T:
75: A:
76: M: A
77: UY: *RIGHT
78: JY: *NO2
79: UN: *ERROR
80: JN: *NO1
<<<<<<<<<<<<<< CODE LEFT OUT HERE >>>>>>>>>>>>>>
437: *LEAVE
438: CLRS:
439: T: DO YOU REALLY WANT TO STOP OR WOULD YOU LIKE
440: T: TO CHANGE LEVELS? IF YOU WOULD LIKE TO CHANGE
441: T: LEVELS, PRESS THE / KEY. IF YOU WANT TO STOP
442: T: PRESS ANY OTHER KEY.
443: A:
444: M: /
445: JY: *MENU
446: CLRS:
447: T: OH, IT IS TIME TO GO. I WILL NOT BE SAD.
448: T: I KNOW YOU WILL COME TO PLAY WITH ME AGAIN.
449: T: YOU DID VERY WELL THIS TIME. YOU GOT A TOTAL OF
450: T:
451: T: [ #STAR STARS]
452: T:
453: T: I AM VERY PROUD OF YOU. I THINK YOUR MOMMY AND
454: T: DADDY WILL BE VERY PROUD OF YOU ALSO.
455: T: YOU ARE VERY SMART AND VERY PRETTY.
456: T: WE WILL PLAY THIS GAME LOTS MORE. WE WILL PLAY
457: T: SOME OTHER GAMES ALSO. I KNOW WE WILL HAVE A
458: T: LOT OF FUN. I LIKE YOU A LOT.
459: T: BYE BYE FOR NOW.
460: WAIT:
461: WAIT:
462: WAIT:
463: CH: MENU.PIL
464: *OPEN
465: CLRS:
466: T: CAN YOU FIND THIS LETTER $NAME?
467: T:
468: E:
469: *RIGHT
470: T:
471: T: YOU ARE RIGHT $NAME! THAT IS VERY GOOD!
472: T: YOU DESERVE A STAR!
473: T:
474: T: { *}
475: T:
476: C: STAR= STAR+ 1
477: T: YOU NOW HAVE #STAR STARS. CONGRATULATIONS!
478: T:
479: WAIT:
480: WAIT:
481: WAIT:
482: E:
483: *ERROR
484: T:
485: T: OOPS! THAT IS NOT RIGHT. YOU ARE TEASING ME!
486: T: LETS TRY THAT ONE AGAIN.
487: WAIT:
488: WAIT:
489: WAIT:
490: E:
```

*RIGHT to display the message for a correct answer. We will discuss the subroutines in a little while. The JY: *NO2 causes the program to go to the next letter if this one is correct. The UN: *ERROR uses a subroutine to display a message for an incorrect answer. The JN: *NO1 poses the same question, giving the child a second chance.

The rest of the questions use exactly the same structure with different letters.

Notice the use of the instruction WAIT:. This instruction causes the computer to idle for a certain time period. I use the WAIT: instruction to stop processing for a short time to let the child, or the parent, read the message on the screen before moving on. We used the instruction freely in all our programs.

Now let's examine the use of subroutines in this program. Each time the child answers a question, some kind of message needs to be displayed, either for a correct answer or a wrong answer. If we really wanted to, we could write the code for the messages right after the answer, which would require a lot more work and make the program extremely long and much harder to understand. Instead of doing that, we use a subroutine. We write the code once only and call it whenever we need it. When writing a subroutine call instruction, the computer "knows" to go to the subroutine and execute the statements there. The last line of the subroutine tells the computer to go back to where it was to continue. Subroutines really are quite beautiful. In fact, subroutines are so good I used exactly the same ones in all the programs, and saved myself a lot of work.

Lines 438-444 are another foolproof feature in all the programs. These lines ask the child if she really wants to quit or if she just wants to change levels and continue playing. When I first wrote these programs, I did not include this feature. In order to change levels, my daughter had to end the program, then start it all over. That didn't seem to be too bad, but by starting over she lost all the stars she had earned on the previous xxxlevel. That was a bit of a disappointment for her, so I went back and put these lines in. It made a big difference!

If the child enters a / at this point, the program goes back to print lines 33-52. From here the child can choose another set to work on. If she enters any other letter, the program prints lines 447-459, waits, and then goes back to the main menu.

The program goes back to the main menu by using the chain instruction, CH:, followed by the program name it goes to. All the programs end by going back to the main menu.

Following the program listing is an example of changing levels and returning to the main menu.

Let's look at the subroutines in some detail, especially why they were written the way they were. The

subroutine *RIGHT starts by telling the child, by name, that she is right, gives some positive encouragement and rewards her with a star for a right answer. The subroutine then increments the number of stars won, tells the child how many she has gotten so far, congratulates her, waits a time period and then goes back to the main program and the next question.

The *ERROR routine was written very carefully to avoid giving the child too much negative criticism. It's all right not to get a correct answer, but let's not attach a stigma to being wrong. This is supposed to be a game, remember. Too much negativism could drive the child away from the programs for a long time and take away part of the fun. The routine tells the child she is not correct, but then says she is teasing the computer. This is an attempt to get away from the negativism of a wrong answer. The program suggests she try again, waits a while and goes back to the main program to try this question again. Just about everything else in this program speaks for itself.

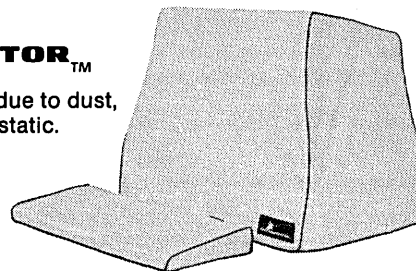
Other PILOT programs I've written for my daughter include: "School," "Count the Letters," "Matching Words," and simple arithmetic. Soon enough she moved beyond these PILOT programs, and I created a new set in MBASIC, which I'm still expanding. (If there is enough expressed interest in this, MOR might publish some of that material.) All I need now is to get my daughter away from the computer long enough to use it myself! ■

Protect Your Investment



THE PROTECTOR™

- Eliminates damage due to dust, smoke, liquids, and static.
- Prevents data loss
- Professional appearance
- Easy to use



The Protector™ is waterproof, yet it breathes. There is no moisture condensation problem.

The Protector is durable. It will never become brittle, crack, or tear.

Custom tailored for the Morrow, The Protector is the best cover you can buy. Fine cotton fabric and expert tailoring make the Protector the only cover appropriate for professional office or elegant home.

Morrow Protector \$39.95. Printer Protector \$19.95.

Credit card orders receive a \$5.00 discount.

To order call 1-800-232-1211. We guarantee satisfaction.

Dealers Inquire on your letterhead.

The Protector Corporation, 375 S. 41st Street, Boulder, CO 80303

REACH YOUR CUSTOMERS!

You have worked hard to make your valuable products/services available to your customers. But they are probably going somewhere else and getting something they really don't want. Because when they need something, they remember someone else's advertising. Unfair? You bet!

E-Z MAIL — THE MAILING LIST SYSTEM THAT DOES EVERYTHING FOR YOU!

Other businesses are paying a great deal of money to influence YOUR customers. It costs them a lot because their mailing lists are unorganized and out of date. You can surpass their efforts with your computer and **E-Z Mail**, the mailing list system that does everything for you.

E-Z MAIL MAKES YOUR MAILING LIST A SNAP!

Unlike the generic "data base" systems, **E-Z Mail** requires no programming. And you don't need to memorize commands either. They are listed on the screen and you just pick the ones you want.



E-Z MAIL OPENS NEW DOORS TO YOUR ADVERTISING!

Imagine your computer printing mailing labels for a select sub-group of your clients. This can really save you money, not to mention anyone you might "rent" your list to. How about the convenience of having your list alphabetized by company name or zip code? Or anything else if you want.

E-Z Mail does it all.

GET THE JOB DONE RIGHT — LET E-Z MAIL DO IT!

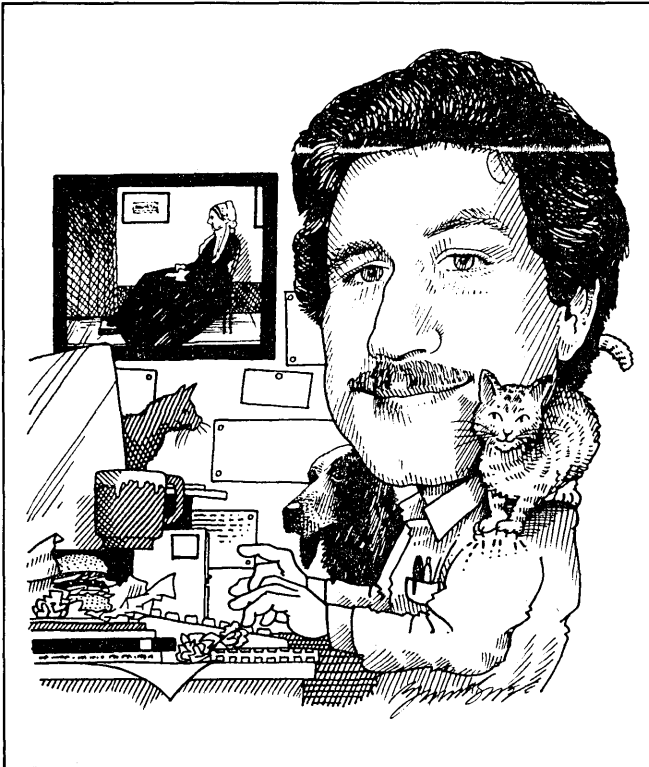
Ask for **E-Z Mail** at your local computer store. Suggested retail price is \$199.



To order direct: send \$199 plus \$5 for shipping. California residents, please add 6% sales tax. Be sure to mention which computer you have. Phone orders (by Mastercard/Visa) accepted.

Practical Business Software 3377 Solano Ave., Suite 307 Napa, CA 94558 (707) 253-8432

Computerese even a mother would love



INSIGHT

by Art Zemon

PAYING BILLS WITH PERSONAL PEARL ... AGAIN

[This column is a tutorial meant especially for beginners to teach you how to use the software that comes bundled with your Morrow.]

The last "INSIGHT" instructed you to set up a pair of Personal Pearl forms and a report. The first form, CREDITR, contained three fields, creditor name (CNAME), a unique creditor ID (CREDID), and an account number (CACCT). The second form, BILL, also contained three fields, the creditor ID for matching to a record in the CREDITR database (CREDID), the amount to be paid (TOPAY), and the date the bill is due (DUE DATE). The report, MONTHLY, summarized the bills which you should pay on any given date.

This article will describe how to expand that system into an automated bill paying system. The idea is still the same. As you receive your bills, you enter them into the computer. Whenever you want (or need) to pay bills you request a report from Personal Pearl.

The improvement is slight but significant. The MONTHLY report was just a list of bills from which you

had to write checks. This month we will modify the system so that the computer can print the checks for you. You will need to add two things to your bill organizer. First is a new report named CHECKS. It will contain all the information necessary for printing checks. Second is a BASIC program which can read the CHECKS output and print checks.

The CHECKS Report

The CHECKS report contains exactly the information which is to be printed on the checks. Create it under the BILL form as a "fixed" type report. The following table describes the fields which comprise the report.

Name	Type	Description
CREDID	C	FORM <CREDITR> ACCESS KEY This field does not appear on the check. It simply allows Pearl to match a bill to the creditor's name and your account number.
CNAME	C	FORM <CREDITR> This is the creditor's name. The check will be payable to this party.
DUE DATE	D	This is the date the bill is due. I like to have this printed on the bottom of the check.
TOPAY	N	This is the amount for which the check will be payable.
CACCT	C	FORM <CREDITR> This is your account number as recorded in the CREDITR form. Most creditors like you to put this on the check.

When you design this form, make all of the fields start in the first column. There should only be one field per line. Do not add any extra headers or comment lines to the report.

All of the field widths should approximately match those in the BILL and CREDITR forms. No harm is done if they are a bit too wide.

The CHECKS.BAS Program

The CHECKS.BAS program will read the file created by running the CHECKS report and then print your checks for you. The program listing accompanying this article (Figure 1) is a check printing program similar to the one that I use. This version is not specific to any particular printer. It is, however, customized for the commercial check form that I have purchased. (If you are curious, it is Deluxe #1004, Deluxe Computer Forms, P. O. Box 43046, St. Paul, Minn. 55164.)

You should not have much trouble customizing CHECKS.BAS to use different check forms. The areas you will need to change are lines 190-250 and 450-520. You only need to change the location at which things are printed.

My checks, the ones CHECKS.BAS is currently set to "understand," look something like the following example when they are filled out.

Pay Exactly fifty-seven and 13/100 dollars

To the	Date	Amount
Order of M. McGillicuty	Apr. 1, 1985	\$57.13

Account number: 555-1212-800

The words in **bold** are preprinted on the check; CHECKS.BAS prints the rest. Knowing what CHECKS.BAS produces, you should be able to understand the program itself. Try not to feel too put off by this if you have never written a BASIC program before. One of the best ways to learn is to start with a running program, make changes in it, and see what happens.

Lines 100 - 160

This section describes the format of the input file. You can actually use this program even if you do not use Personal Pearl. Just create a file (with an editor or with another program) containing five lines per check as described here.

Lines 180 - 310 and 810 - 830

This section initializes the program. The values set in lines 190 - 250 partially describe how the check form is layed out. LM%, DM% and AM% are the columns where various items begin. PAY%, MISC% and ACCT% give the line numbers where the items appear.

WE HAVE REMOTE!!

InterCONNECTtm allows your Morrow MD11/16/34 to be run REMOTELY! by other computers or terminals. With InterCONNECT you can call videotext services, bulletin boards, etc. and up/download files. You can also transfer files with full wildcards and error checking (will talk to Modem7) between computers. Standard InterCONNECT available for CP/M-80, CP/M-86 & MS-DOS.

DEALERS: Think of the time/money you'll save not having to travel to your customers' site for simple program and data file repairs, etc...

All this for only \$150.00. Send orders to:

MICRO EASE, Inc.
4601 So. 50th St. Suite 214
Omaha, NE 68117

toll free @ 1-800-835-7427 Extension 238.

ORDER TODAY!!

Dealer Inquiries Welcome

Lines 300 and 310 set up for the routine which translates "57.10" into "fifty-seven and 10/100 dollars." The data itself is found in lines 810-830.

Lines 330 - 370

This section gets the name of the data file (the output from the CHECKS report) and today's date. If you just hit <RETURN> when CHECKS.BAS asks you for the name of the data file then file "B:CHECKS" will be used. The date you type will be printed on each check.

Lines 390 - 560

This is the main loop of the program. It is executed once per check (until the end of the report output file).

Lines 400 - 440

These five program lines just read the five data lines for a single check from the data file.

Lines 450, 470 and 510

These lines position the check properly in the printer for a particular item to be printed. The desired line number is placed in variable L% and the subroutine at line 770 does the actual positioning.

Lines 460, 480, 500 and 520

Once the check is positioned in the printer, these lines print on it. Line 500 skips the account number if it is either blank or zero.

Lines 570 - 610

This section closes the data file, removes it if you so wish, and returns to CP/M.

Lines 620 - 760

Think of this subroutine as a bit of a puzzle. It takes a string variable, TOPAY\$, as input and prints the appropriate words on the check. But how does it work? I will mail you the answer if you cannot figure it out.

Lines 770 - 800

This is the only part of the program which advances the check within the printer. Consequently, it "knows" how the paper is positioned at all times. Given a desired line number in L%, it just moves the paper one line at a time until it is properly positioned.

Using the New Bill Paying System

Whenever you want to print checks, start by running the CHECKS report. Make sure the title field is empty and that "Number or report lines per page" and "Total lines per page" are both set to five. Finally, set the output file to "B:CHECKS." (Be sure you enter the period at the end of the file name). This will create a file named "CHECKS" on drive B.

(continued on next page)

Figure 1

```

100 REM ***** Print checks *****
110 REM expected input is a series of lines as follows:
120 REM      garbage (creditor ID, ignored by this program)
130 REM      name
140 REM      date due
150 REM      amount to pay
160 REM      account number
170 REM -----
180 DEFINT A-Z
190 LM% = 9      ' far left margin
200 DM% = 53     ' date left margin
210 AM% = 69     ' amount left margin
220 PAY% = 8     ' PAY is on this line
230 MISC% = 10   ' TO THE ORDER OF, DATE and AMOUNT are on this line
240 ACCT% = 15   ' account number is on this line
250 TOTAL% = 42  ' total length of the check form
260 CL% = 1      ' current line on the check
270 F$ = "\      \: $$$$$$.##"
280 DIM N1$(18), N2$(8)
290 REM initialize the arrays used for converting numbers to words
300 FOR T% = 0 TO 18 : READ N1$(T%) : NEXT
310 FOR T% = 1 TO 8 : READ N2$(T%) : NEXT
320 REM get the name of the CHECKS report file
330 INPUT "Enter data file: "; FILE$
340 IF LEN(FILE$) = 0 THEN FILE$ = "B:CHECKS" : PRINT "Using file " FILE$
350 OPEN "I", #1, FILE$
360 REM get today's date for printing on the checks
370 PRINT "Enter the date: "; : LINE INPUT DATE$
380 REM Main loop. -----
390 WHILE NOT EOF(1)      ' read until the end-of-file
400   LINE INPUT #1, GARBAGE$
410   LINE INPUT #1, CNAME$
420   LINE INPUT #1, DUEDATE$
430   LINE INPUT #1, TOPAY$
440   LINE INPUT #1, CACCT$
450   LZ = PAY% : GOSUB 770
460   GOSUB 620      ' print the dollar amount
470   LZ = MISC% : GOSUB 770
480   LPRINT TAB(LM%) CNAME$ TAB(DM%) DATE$ TAB(AM%);
490   DOLLARS# = VAL(TOPAY$) : LPRINT USING "$$###.##"; DOLLARS#;
500   IF LEN(CACCT$) = 0 OR CACCT$ = "0" THEN 530
510   LZ = ACCT% : GOSUB 770
520   LPRINT TAB(LM%) "Account number: " CACCT$;
530   PRINT USING F$; GARBAGE$, DOLLARS#
540   TOTAL# = TOTAL# + DOLLARS#
550   LZ = 1 : GOSUB 770
560 WEND
570 CLOSE #1
580 PRINT : PRINT USING F$; "Total checks written", TOTAL#
590 PRINT : INPUT "Delete data file"; GARBAGE$
600 IF LEFT$(GARBAGE$, 1) = "y" OR LEFT$(GARBAGE$, 1) = "Y" THEN KILL FILE$
610 SYSTEM
620 REM Convert numeric amount to written. -----
630 LPRINT TAB(LM%); "Exactly ";
640 LENGTH% = LEN(TOPAY$) : AMOUNT = VAL(LEFT$(TOPAY$, LENGTH% - 3))
650 T = INT(AMOUNT / 100)
660 IF T% > 0 THEN LPRINT N1$(T%-1) " hundred ";
670 AMOUNT = AMOUNT - 100 * T% : T% = INT(AMOUNT)
680 IF T% < 20 THEN 730
690 T% = INT(AMOUNT/10)
700 LPRINT N2$(T% - 1);
710 AMOUNT = AMOUNT - 10 * T% : T% = INT(AMOUNT)
720 IF T% <> 0 THEN LPRINT "-";
730 IF T% > 0 THEN LPRINT N1$(T% - 1) " and "; ELSE LPRINT " and ";
740 T% = VAL(RIGHT$(TOPAY$, 2))
750 IF T% < 10 THEN FORMAT$ = "0#/100 dollars." ELSE FORMAT$ = "##/100 dollars."
760 LPRINT USING FORMAT$; T%; : RETURN
770 REM Move printer to check line LZ -----
780 IF CL% = LZ THEN RETURN ELSE LPRINT
790 CL% = CL% + 1 : IF CL% > TOTAL% THEN CL% = 1
800 GOTO 780
810 DATA one, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve
820 DATA thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen
830 DATA twenty, thirty, forty, fifty, sixty, seventy, eighty, ninety

```

(continued from p.12)

Next, type enough <ESC> characters to get out of Personal Pearl. Leave the data disk in drive B, but put your MicroSoft Basic (MBASIC) disk in drive A. Finally, run the CHECKS.BAS program by simply typing "MBASIC CHECKS" at the A> prompt.

As usual, if you have questions, please write to me. You can reach me at 4743 Matney Ave., Long Beach, CA 90807, MCI: AZEMON or CompuServe 72406,3275.



TECH, NO!

This is just a friendly reminder to all you future subscribers to the Morrow Owners' Review that the MOR office can't offer you technical support over the phone. We are a small half-time staff, unequipped to deal with such problems. We suggest that you mail your technical questions directly to Stan Ahalt for his "Mailbox" column or to David Block for "David's Q & A" (c/o MOR). If you have questions regarding back issue orders, subscriptions or your nearest Users Group, we'd be happy to help you. Please call or preferably write to us. Glad to have you on board!



Drawing by Fred Rheinfrank

Special Free Offer

SmartKey II speeds up and improves accuracy in computing and is so good that it is now being bundled with Morrow computers. SmartKey II lets you easily reprogram as many upper and lower case keys on your keyboard as you want, even while WordStar, New Word, or any other software is in operation. In a dynamic review of SmartKey II, Stan Ahalt flatly states, "This is probably the most useful software I have ever seen." Peter McWilliams, William Buckley, and others are equally impressed.

Uses for this powerful, easy to operate program are endless. With SmartKey II you can assign up to 3,750 characters to a single key. Once you have redefined keys, you can put them to work or change them at will. You can also store your "smart key" definitions in a special file and use them later, or make numerous definition files to use with a variety of your favorite programs or projects. Imagine saving complex command codes, boilerplate paragraphs, sentences, proper nouns, inventory numbers, or whatever, and then injecting any of them into your work with the stroke of a single key. This is a must-have, time saving computer program for all MD owners.

SmartKey II has a little known super companion program called SmartPrint II. SmartPrint II retails at \$49.95. SmartPrint lets you give single-stroke commands to make your dot matrix printer produce italics, greek characters, graphic symbols, boldface, underlining, extended typefaces, accent marks, and much more. SmartKey II retails at \$89.95. Now, for a limited time only, Central's **combination pack** of SmartKey II and SmartPrint II is only **\$79**. In addition, as a bonus, with your purchase you will receive a **free copy** of Paul Golding's book, *Screen Smarts, The Computer Tamer's Guide*. This book is a \$15.95 value. It tells how Mr. Golding, a professional writer, uses SmartKey II to turn his humble computer into a supercharged dedicated word processor. Please don't delay, this offer may not be repeated. Order today to get SmartKey II, SmartPrint II, and a free copy of *Screen Smarts, The Computer Tamer's Guide*, fast.

Enemies of Morrow®... Spikes, Surges, and Noise

The Morrow has enemies. But now you can protect it from the mish mash of electrical currents that race through your home or business. Powerful up-surges of current can actually blow out your machine. Less powerful, barely noticeable spikes, surges, and noise can silently degrade your system in time, ruining chips, destroying data, and causing expensive service calls.

The fact is: "Line filtering will protect your computer...from power surges or other undesirable occurrences from the power source." Surge protection will help your Morrow provide years of trouble-free service. Also, if you plan to use your Morrow to access information by modem, you must have a reliable high frequency noise (EMI/RFI) suppressor to insure against data loss and scrambling.

There are many "toy" surge suppressors on the market. They are smartly colored, but beware. The performance difference is amazing. The best surge and noise suppressors on the market are made by Panamax. Our "Panamax Challenge Certificate" tells all. It is a startling comparison of Panamax quality with 11 other well-known brands. One aspect of this revealing report tells how Panamax responds to and cuts surges in 5 or less pico seconds, while most other suppressors respond at a comparatively slow 5 to 50 nanoseconds!

Check our regular low prices. Try the Panamax of your choice for 15 days. Receive the "Panamax Challenge Certificate" with your purchase. If not completely satisfied with your purchase, return for immediate full refund. Your Morrow deserves Panamax protection, the best there is. Order today.

Introducing A Classic Form Fitting Morrow Cover

At last, the classic MD dust cover you'll be proud to own and use. This first rate computer cover is made from a premium, lint free, static free, washable, free breathing, and fade resistant sailcloth. It comes in a rich looking Navy blue or Sand. The Navy cover has a smart contrasting silver gray piping and trim that adds a superior finished look. Not to be outdone, the Sand cover is handsomely finished in a rich chocolate piping and trim.

For a limited time only, your price for this factory direct, custom made, one-piece sailcloth Quality Cover is \$18.95. When ordering remember to indicate color preference. This special low price is subject to change. You must be completely satisfied with your purchase of this cover or we will refund your money immediately. Order today.

Richly tailored inside and out. Look inside any of our Quality Covers; see the ultimate finishing; we use machines that sew with 3 needles so that edges will not unravel or shed lint. We stress perfection because you deserve the best. Compare for long-lasting satisfaction.

Morrow owners are talking about ...

consultant that has written an entire line of computer books, and as such is uniquely qualified to thoroughly explore and explain the architecture, capabilities, and uses of Morrow computers. This fully illustrated book takes you on a grand tour of the ins and outs of the operation of Morrow computers. Long time Morrow owners say how much they appreciate the informative treatment Steven Frankel has given their computer.

The Compleat Morrow Micro Decision is the first serious book on the Morrow computer line released by a major publishing house. The more than 220 fact-filled pages of this book are jam packed with accurate information and technical advice that make it an invaluable tool for Morrow owners. Hard facts explored here include reviews and advice on the selection of super productive software that will enhance the operation of your Morrow. If you want to learn more about your Morrow computer and how to get real computing power from it, put this book on your desk. It pulls no punches. Retail price of this book is \$16.95. Our current price is **\$15**. Please call or write today to order your copy of this informative book today. Satisfaction guaranteed or your money back.

"Spikes and surges can be the greatest threat to your computer outside a 4 year old child with a jelly sandwich aimed for the disk drive slot."

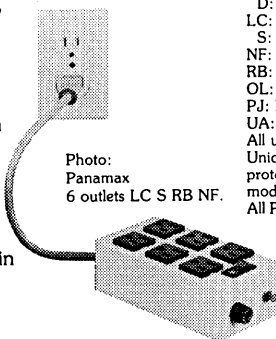


Photo:
Panamax
6 outlets LC S RB NF.

PANAMAX SURGE SUPPRESSORS

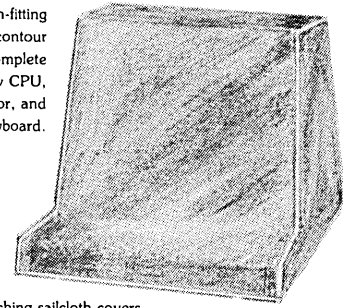
Description	List	Price
2 outlets, D NF	\$ 79.00	\$ 59.00
4 outlets, LC S RB NF	\$109.00	\$ 89.00
6 outlets, LC S RB NF	\$119.00	\$ 99.00
UltraMax, LC S UA NF	\$159.00	\$129.00
TeleMax, D 10L 2PJ NF	\$ 89.00	\$ 72.00

D: Connects direct to grounded wall jack.
LC: Includes 6 foot long heavy duty line cord.
S: Includes illuminated on/off switch.
NF: Includes EMI/RFI noise filter.
RB: Includes reset button.
OL: Includes outlet.
PJ: Includes 2 phone jack receptacles.
UA: Includes under voltage alarm/brown out protection.
All units include the added security of a 4 amp fuse.
Unique Panamax EMI/RFI noise filters provide protection in common and transverse mode. Essential for modern communications, multi-user stations, etc.
All Panamax units are factory guaranteed for 60 months.

"Power line-associated problems are estimated to cause nearly 70 to 90 percent of the malfunctions in the IBM PC."

"Overvoltage can be fatal to both data and hardware alike."
P.C. Magazine, March 1983

Our form-fitting cover follows contour of the complete Morrow CPU, monitor, and keyboard.



Matching sailcloth covers for many different popular printers: \$14.95. Indicate make and model.

- Quality tailoring
- Easy care fabrics
- Attractive colors
- Professional appeal

FACTORY DIRECT

The Compleat Morrow Micro Decision, A Guide to the MD 1, 2, 3, and 11 published by the Computer Book Group of the Reston Publishing Company is hot off the presses. This book is causing quite a stir among new and veteran Morrow owners. It's no wonder too. The author, Steven Frankel, is an independent

Lockable Diskette Defender

Handsome, sturdy, smoke-tinted acrylic tray holds 70 MD-size diskettes. Flip-up lid keeps out dust, debris, and moisture, and locks securely to guard your important work. Comes with 7 dividers with index tabs for easy filing and to keep floppies upright to prevent bending, warping, and scratching. Tough and secure metal lock never comes in contact with diskettes because it is enclosed in a special plastic housing. Super value at \$22.95 for one, or \$20.95 each if you buy 2 or more. Keep prying eyes and sticky fingers away from your data. Order today.

Price Protection Policy

Central Computer Products will meet or beat any price listed in this magazine on products also advertised in our ads. If you see a lower price, please tell us. We'll beat that price and pay shipping too. Try us for dependable lightning fast service today. Thank you.



800-533-8049 USA
800-624-5628 CA

Product Description List Central

Morrow Software

ATI TRAINING DISKS		
CP/M	\$ 39.95	\$ 34.00
MBasic	\$ 39.95	\$ 34.00
Multiplan	\$ 75.00	\$ 52.00
SuperCalc	\$ 75.00	\$ 52.00
Wordstar	\$ 75.00	\$ 52.00

BORLAND INTERNA		
Turbo Pascal 2.0	\$ 49.95	\$ 47.95
Turbo Toolbox	\$ 49.95	\$ 45.00
Turbo Gift Pak with Tutor	\$ 99.95	\$ 92.00

CDE SOFTWARE		
Checks & Balances	\$ 74.95	\$ 69.95

CHUCK ATKINSON PROGRAMS		
Quick Check Money Manager	\$ 95.00	\$ 79.00
Quick Check + AR	\$195.00	\$155.00
Retail Inventory + Q Register	\$395.00	\$299.00

DIGITAL MARKETING		
Bibliography *	\$125.00	\$ 99.00
Footnote *	\$ 99.00	\$ 79.00
Grammatik *	\$ 75.00	\$ 69.00
Hyper Typer	\$ 29.95	\$ 26.00
Milestone, Project Planner	\$250.00	\$199.00
Notebook	\$150.00	\$109.00
Writer's Pak —	\$295.00	\$259.00
includes all * programs and spelling checker		

EAGLE ENTERPRISES		
Citation	\$185.00	\$155.00

FYI, INC.		
FYI 3000	\$395.00	\$295.00
SuperFile with Sort & Merge	\$195.00	\$145.00
these programs organize text into data bases		

INFOCOM		
Zork I	\$ 39.95	\$ 37.00
Zork II, & III each	\$ 44.95	\$42.00
— other Infocom interactive games, call for prices.		

LEXISOFT		
SpellBinder	\$495.00	\$299.00

MENDOCINO SOFTWARE		
Eureka, Disk Cataloger	\$ 50.00	\$ 48.00
— helps you find the right file instantly		

MICROSOFT		
MBasic Compiler	\$395.00	\$295.00
MultiPlan	\$195.00	\$155.00

MICROSOLUTIONS		
Uniform MD2	\$ 69.95	\$ 49.95
Reads and writes 33 + machine formats		
Uniform MD3	\$ 69.95	\$ 49.95
Reads and writes 78 + machine formats		

MYCROFT LABS		
Mite	\$150.00	\$ 99.00

OASIS SYSTEMS		
The Word Plus	\$150.00	\$105.00

QUIC-N-EASY PROD.		
Q-Pro-4	\$595.00	\$395.00
with multikey file indexing		

SAN FRANCISCO COMP		
Power!	\$169.00	\$125.00
DocuPower!	\$169.00	\$125.00

SOFTCRAFT		
Fancy Font	\$180.00	\$149.00

SOFTWARE TOOLWORKS		
MyChess	\$ 34.95	\$ 29.95
Word Wiggle	\$ 29.95	\$ 27.00
Eliza	\$ 24.94	\$ 22.00

SORCIM		
SuperCalc 2	\$295.00	\$235.00

Hardware

CONSOLINK CORP		
MicroSpooler 64k P-P	\$315.00	\$279.00
— for information on other models, please call		

PANAMAX		
PowerMax, 250 Watt UPS	\$459.00	\$399.00

SWP MICROCOMPUTER PROD		
256k Co-Processor-88 MSDOS	\$500.00	\$435.00
Co-Processor lets you run IBM-type software.		
— Please call for prices on other models.		

Supplies

Dysan SSDD MD2 disks	10/box	\$ 27.00
Dysan DSDD MD3 disks	10/box	\$ 37.00

Prices, specifications, and offers subject to change without notice.

Do You Wish Writing Were Easier?

If you need to write, or want to write clearly, your MD2 or MD3 and the software program **Punctuation and Style** can help you get there faster. It improves, clarifies, and enriches your writing by identifying sentences with misused, redundant, faulty, cliched, or erroneous phrases, and shows you how to improve them. It helps you rewrite and check your work by quickly marking and annotating your files for easy correction. In addition to computer-fast identification of awkward, muddy, pompous, and wordy sentence structure, it also finds missing or improper punctuation, unbalanced quotes, wrong abbreviations, faulty capitalizations, and much more. **Punctuation and Style** actually improves your writing by mercilessly pointing out grammatical errors. After a few weeks with Oasis System's **Punctuation and Style** your writing is bound to become more dynamic, expressive, and honest. In time, you'll stop worrying about grammar and work on projecting ideas instead. After all, that's what writing is about.

Punctuation and Style makes writing and rewriting much easier. The list price of **Punctuation and Style** is \$125. Central's price is \$99. Experience the power of this valuable "Punctuation Checking and Writing Improvement Software" yourself. Order today to get this program fast.

Punctuation and Style works on files created with Wordstar, New Word and other word processors. Comes with an easy to use, clearly written manual and an attractive binder. Join thousands who now write with more confidence, faster, and better.

72,000 Word Thesaurus

Stardrive by Robonics is a new software program that makes Wordstar or New Word into a fully integrated word processor, dictionary, thesaurus, calculator, and graphics kit. **Stardrive** is a four-part Wordstar and New Word power booster. It includes Graphics Express that lets you easily put bars, lines, pies, or other graphics in your text. Math Express allows you do calculations in text files. Spelling Express is a 100,000 word dictionary that checks spelling faster than other programs. Word Express is a 72,000 word electronic thesaurus that lets you put your cursor on a word in your text, press the escape key, and a list of synonyms appears. Then you press a key again to select and place the best word in your text. Some of these powerful functions can be used without ever leaving your word processor.

Stardrive lets you write, spell, draw, and calculate like never before. List price of **Stardrive** is \$200. Central's current price is \$149. **Stardrive** is available for Morrows that have storage of at least 250k per drive. Order today to get this multi-pack of powerful programs fast.

Attention: **Stardrive** will give your text files new vim, vigor, and punch. A beautiful thesaurus. At last.

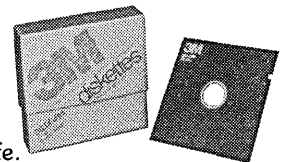
Top 70 Free Programs

The Free Software Handbook is chock full of documentation, reviews, and commentary on the use and abuse of the top 70 public domain programs. It might cost a dedicated hacker hundreds of hours and maybe thousands of dollars to track down this box full of goodies. Super CP/M utilities like Unerase, D.Com, and RPIP are here. Also includes Bio.Com, Wumpus.Com, Adventure.Com, Food.Com, and dozens of other valuable free programs too.

If you want to share in the free software bonanza but don't have the time to search through piles of useless software to find a few precious gems, this book is for you. The list price of **The Free Software Handbook** is \$17.95. Central's price is \$15.95. If you want both **The Free Software Handbook** and all the programs reviewed in the book, send \$49.95 and indicate whether you have an MD2 or MD3 computer. Save yourself the time and effort of compiling these programs. Order the **Free Software Handbook** today.

The Free Software Handbook is published by PeopleTalk Associates. The authors looked at thousands of programs. They challenge readers to find better ones. It can't be done.

Save Money. Save Worry.



3M diskettes.

Certified

100% error-free.

Guaranteed for life.

Tested 327 ways.

They work like a charm on Morrows.

Factory sealed. Best data diskette made.

3M — One less thing to worry about.

No minimums — No limits

Box of 10 DS-DD MD 2 diskettes: **\$18.**

Box of 10 DS-DD MD 3, 5, & 11 disks: **\$23.**

3M Head Cleaning Kits for MDs: **\$21.**

3M DeskTop 24"x 26" Anti-Static Mats: **\$44.**

CENTRAL COMPUTER PRODUCTS

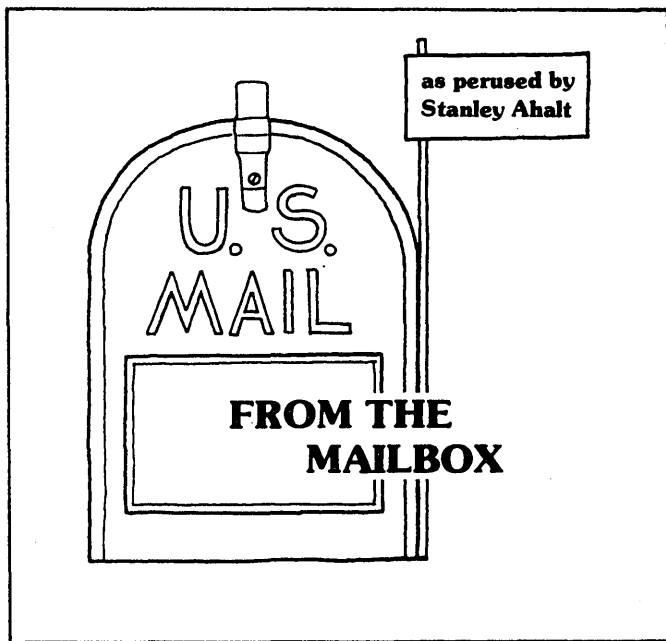
330 Central Avenue, Dept. MR1
Fillmore, California 93015
(805) 524-4189

Dear Central,

Please send me the items listed below. I want fast, friendly service. If I am ordering software, I have included my phone number and the make and model of computer. I want the software to work on. My check, money order, or card number is enclosed. Thanks.

Description	Price
Morrow Model _____	Sub Total _____
FIRM MONEY BACK GUARANTEE ORDER WITH CONFIDENCE	CA Resident 6% Tax _____
	Postage & Handling \$ 3.00
	Total \$ _____
☐ Phone: () _____ ☐ Check enclosed ☐ Money Order enclosed ☐ Visa/Mastercard # _____ Exp. Date _____ Sig. _____ Name _____ Address _____ City _____ State _____ Zip _____	

Visa and Mastercard phone orders accepted. **Call toll free.**
To order by mail use coupon, letter, or photo copy. Thank you.



[This column is an open forum for users to share their questions--and answers. I encourage you to send in both. If I can't answer the question, maybe someone else out there can.]

Well, folks, now that we have been cast adrift by Morrow, it is even more important that we pull together. So keep those questions, answers, and comments rolling in. You can mail direct to me at:

Stan Ahalt (803) 654-2748
102B Victoria Lane MCI: SAHALT
Clemson, SC 29631

From Dorothy W., Sacramento, CA - Not only did Dorothy send me a package to forward to one of the folks that had posed a question in this column earlier (which I will be glad to do), but she also sent me the following. Some months ago a Printer Test Program appeared. It did not work, so Dorothy's brother Louis W. corrected it. Here it is:

```
10 REM PRINTER TEST PROGRAM
20 REM CMDUG
30 FOR X = 0 to 255
40 IF X = 12 THEN 70 :REM (don't formfeed)
50 LPRINT CHR$(X),
60 IF INT(X/6)=X/6 THEN LPRINT :REM (new line)
70 NEXT X
80 END
```

From Chris S., Wheaton, IL - When you are running Correct-It (CI) from WordStar (WS) No-File Menu, if CI is on the same disk as WS then use "R" to run a program, specify CORRECT and then file name. After the program is finished, press any key to return to WS. If CI is on another disk, use "R", specify C:CORRECT, follow prompt to insert program in drive A but just

return after rest of prompts to re-assign to drive A, until through with CI, at which time when prompted to re-assign drive A, re-insert WS and hit any key to return to WS. Thanks, Chris. ##

From Joseph P., Puerto Rico - Does anyone know of a NewWord patch that allows the program to be used with a Gemini 10X printer? ##

From Don D., Berkeley, CA - Don would VERY much like to get the arrow keys working on his terminal which is hooked to an MD3. The spring 1984 issue of Microcomputing describes a patch for an Osborne. (Also see my column in the last MOR.) I don't see why SmartKey can't be used. Also, we hope to have an article on this issue soon. Come on now folks, someone must be able to shed some light on this one! Where are you hackers who love to patch WS? ##

From William B., Farmington Hills, MI - William wants to know what the program NSWEEP does. Well, NSWEEP is about the most handy PD utility that I have seen. With it you can copy groups of files, delete them, move them, look at them, squeeze them, unsqueeze them.... In fact it does so much that I put it on every disk right after formatting the disk. To invoke (run) NSWEEP, just type NSWEEP when you see A> on the screen. (Of course, you have to have NSWEEP.COM on the disk that is in the A drive.) From there on, everything is Menu Driven and self-explanatory.

[NWSWP202.COM and NWSWP205.COM are available on BAMDUA Library Volume #15 for \$8.00. Write BAMDUA (Bay Area Micro Decision Users Association), P.O. Box 5152, Berkeley, CA 94705. Nearly all Electronic Bulletin Boards carry even later versions. --Ed.] ##

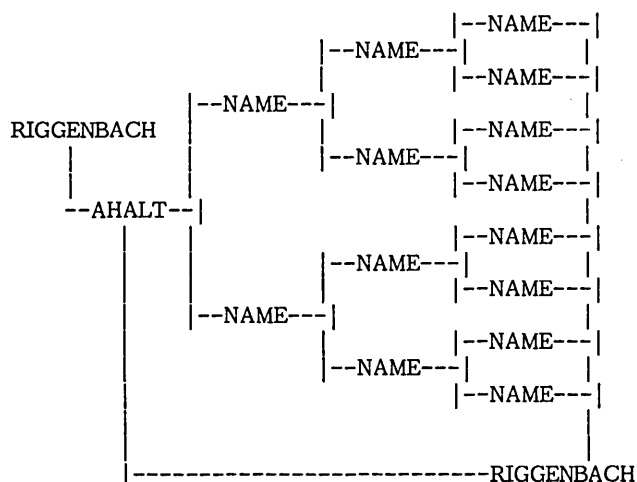
If you want to read some more words from Chairman Morrow, see the January 21, 1985 issue of Computer Systems News for an interview with Dr. Morrow. Kind of thought-provoking for a company that is about to go big time with a MS-DOS compatible product! ##

The following letter is particularly pertinent since we are now, effectively, orphans. And we are spread far and wide over the country, many of us not having access to a local Users Group. [John wrote his letter before MOR Vol. 2, #1 appeared with articles for the first time on PILOT and Personal Pearl. --Ed.]

From John R., Melbourne Village, FL I use my MD3 for word processing almost exclusively. Frankly, taking on my first computer and WordStar at the same time has been all that I can handle. MOR has been a great help but two months between issues is a long wait when you need all the help you can get. That is the purpose of this "letter." Despite filling a void, MOR is not serving my purpose to the extent that I would like. Users Groups solve this type of gripe by forming SIG's, but the density of Morrow owners in many areas is not sufficient to support a Users Group let alone SIG's.

I am proposing an idea (loosely formed) that might help solve the problem for lonely Morrow owners who are interested in subjects that so far have been covered

I suggest that any one Cell be limited to 15 members. Any owner can start a Cell and ask members of their Cell to do the same; eventually, we should find other owners with similar interests and problems without placing an undo burden on any one person. I've tried to illustrate the Pyramid in this diagram.



Well, enough is enough. See you next month.



Electra·Find

MORROW DRIVE ERROR MESSAGES

by Blake Handler

When a disk error message appears on the computer screen, we all know that sick feeling of, "Oh, no, not again. Have I lost all that work? What can I do?" Depending on the type of message, your response can minimize, perhaps correct, such errors. Here are a few common messages and how to handle them.

Disk error messages always appear in two lines. The first refers to the actual error and the second gives you a choice of actions. The second line is:

Type R to try again, A to abort, or I to ignore:

Rule of thumb: When this disk error message appears, press **R** to retry. If the message reappears, remove the disk from the drive and, inserting your finger through the center hole, twirl the disk (without removing it from its black casing). Then re-insert the disk in the drive. Hit **R** one more time.

If you are still getting an error message, try to correct the cause as indicated by the first line of the error message. Let's take a look at the following cases.

Disk error on drive A: Drive not ready.

This usually means the drive latch is open, there's no diskette in the drive, or the floppy diskette is upside down (or sideways). Close the drive and/or adjust the diskette, and press **R** to retry. If this does not solve the problem, check the cabling and setup of the drive. If the problem remains, have the system checked out.

Disk error on drive A: Write protected.



The diskette you are trying to store information on has a (silver) write protect sticker covering the side notch. (NOTE: Cellophane tape won't write protect.) Determine why the sticker was put there in the first place! Call up the directory to see what is on the disk-- maybe you have a disk mix-up and you really don't want to write on this one. After thoroughly checking out the reasons for the write protect sticker, remove it and press **R** to retry. If the diskette is not write protected, a write protect tab has probably fallen off inside the disk drive. Open the unit and remove the tab or have the system checked out.

Disk error on drive A: Not found.

The diskette is either not formatted, has a foreign diskette format (i.e., Kaypro, Osborne), or is damaged. Type **A** to abort and investigate the diskette. This can also mean a bad disk drive.

Disk error on drive A: Seek error.

This usually means the disk drive is bad. Type **A** to abort and run your diagnostic software. If the drive is bad, you sometimes do better to replace it than to have it repaired. Check with the drive manufacturer as to cost of replacement. Don't be afraid to buy a drive and replace the bad one yourself.

Disk error on drive A: Data error.

The diskette has corrupted data and it cannot be read correctly. Type **A** to abort. If it was a working program diskette, return to the "Make Working Diskettes Menu" on your CP/M distribution disk and make a new one. If it is a data diskette, follow these instructions to reconstruct it:

- 1) When you turn on your computer and get the message, "Insert CP/M in drive A and press RETURN," do so.
- 2) Put a blank diskette in drive B and format it. You can do this from the Utility Menu of your CP/M disk. Use "Format or Sysgen a diskette."
- 3) Then use "Execute a CP/M command" and when you get the **A>** type: "**PIP B:=E:*. *[OVR]**", followed by a carriage return.
If you have an MD3, you'll then see:
"Your lower drive is being re-assigned drive E:
Exchange diskettes and press [RETURN]"
If you have an MD2, it will say:
"Your left drive...etc."
Now you put the corrupted data disk in drive A and hit RETURN.

- 4) Any time a data error comes up, type "I" to ignore. This is the only time you can safely use "I."

And now what? You've got all the data you can salvage. In all data error cases, some information will be lost. Here's your last hope:

If it's a WordStar diskette, re-edit the file.

If it's a Personal Pearl diskette, run file maintenance and pray.

If it's a LogiCalc diskette, try partial loads and piece together.

THE BEST ADVICE IS TO BACK-UP YOUR DISKS FREQUENTLY! For further reading on error messages, see your User's Manual.

[Thanks to Emma Paquin for permission to reprint this article from Morrow Owners' Digest, January/February 1985, Vol. 3, # 1, p. 7.] ■

COMPLAINTS ABOUT ADVERTISERS

Only rarely do we receive complaints about advertisers in the mail of the Morrow Owners' Review. However, if you happen to have a legitimate complaint, here is an effective way to deal with it: Write to the advertiser, noting all the details leading to your complaint and mention that you're sending us a copy. Then do send us one! That way the advertisers know that we know, and that is bound to help you get satisfaction. In at least one case, the advertiser has responded to both the client and MOR with a most courteous reply while offering a reasonable solution for the problem at hand.



Turn on Your MDT-20 Arrow Keys

Tired of hunting for the correct Wordstar control key to press when typing? This ADM-20 (alias MDT-20) Upgrade Kit enables your arrow keys to send the correct control key and defines F1 thru F7, CHAR INS/DEL and LINE INS/DEL as useful control keys. Check out these added features:

- 19 Programmable function keys (Smartkey II compatible).
- 37 Graphic shapes available via ESCape sequences.
- 48 Character type-ahead buffer. (Requires 8 wire RS-232 cable)
- Screen Saver protects your terminal by blanking the screen after 10 min. of inactivity (Serial No. > 25110000 only).

The Upgrade Kit is \$40, plus \$14 for an 8 wire RS-232 cable (when ordered with Kit). Prices include shipping/handling. Arizona residents add 6% sales tax. Sorry, no COD or credit card orders. Please specify terminal serial # with order.

SOFTWARE TECHNIQUES

3537 West Charleston Avenue
Glendale, Arizona 85308
(Reviewed in MOR #4, Oct. 84).

GEM PATCH for NewWord

Thanks for all of the inquiries for GEM PATCH for NewWord. It is finally available!

Now you can add the custom functions and the improved PRINT MENU that are available for WS, and there are no extra programs to run.

Depending on the printer and which version of NW you have, you can add some combination of 12 cpi, 17 cpi, Italics, WideType, True Underlining, Mathematical and Scientific Symbols, Super- and SubScript, 78 Right Margin, and 62 printed lines per page.

The Easy-to-follow directions include instructions to change INSERT ON, MENU HELP LEVEL, PAGE NUMBERING, JUSTIFICATION, and other defaults, allowing you to customize your system to suit your preferences.

Prices vary from \$8.95 to \$12.95. See our 1/2 page ad in the 12/84 MOR for additional general information. Send for a multi-page descriptive flyer and order form today.

GOODNIGHT DESIGN
18525 Collins St., #A4
Tarzana, CA. 91456

NewWord is a trademark of NewStar Software, Inc.

MDBITS A Program to Replace SETBAUD

by Stan Young

Thanks to Stan Ahalt for providing us with the following program for Rev. 1 boards, written by Stan Young of Compusurance, Inc. in Miami, Florida. This program, written in Pascal, should be compiled with the Turbo Pascal compiler. (If you're not into compiling yourself, you can get the MDBITS.COM file on the BAMDUA Library Volume #19, a single-sided floppy. Send \$8.00 to BAMDUA, P.O. Box 5152, Berkeley, CA 94705.) This little gem allows you not only to run your printer port at 300 or 1200 baud but also as high as 19,200 baud. This is a tremendous advantage for people who have printers equipped with buffers; the high transfer rate frees up your computer in no time. Unfortunately, it only works for Rev. 1 boards. Enjoy!

Program MDBITS;

Var

portnum: byte;

Procedure Explain;

begin

Writeln;

Writeln('MDBITS Ver. 1.0');

Writeln;

Writeln('(c)1984 by Compusurance, Inc.');

Writeln('POB 61952');

Writeln('Miami, FL 33256-1952');

Writeln('CIS: 70665,225 Source: BBC390');

Writeln;

Writeln('This is a replacement for the');

Writeln('Morrow Micro Decision SETBAUD');

Writeln('program. SETBAUD is supplied');

Writeln('for MD computers without parallel');

Writeln('ports (Revision 1 boards). You');

Writeln('must set the internal DIP switch');

Writeln('on the Printer/Modem port for');

Writeln('1200 BPS. You can then select');

Writeln('300, 1200, or 19200 BPS operation.');

Writeln;

Writeln('This program may be used and');

Writeln('distributed on a non-commercial');

Writeln('basis. Resale of this program');

Writeln('without the written permission');

Writeln('of Compusurance, Inc. is strictly');

Writeln('prohibited. Reasonable time,');

Writeln('materials, and postage fees may be');

Writeln('charged.');

Writeln;

end;

Function Portspeed: byte;

Var

getspeed: char;

begin

Writeln;

Writeln('Select A for 300 BPS');

Writeln('B for 1200 BPS');

Writeln('C for 19200 BPS');

Writeln;

Write('Selection: ');

Readln(getspeed);

Case getspeed of

'A','a': portspeed := \$4F; (Divide by 64)

'B','b': portspeed := \$4E; (Divide by 16)

'C','c': portspeed := \$4D; (Divide by 1)

else

portspeed := \$4E; (Default to 1200 BPS)

end;

end;

begin

portnum := \$FF;

explain;

port[portnum] := \$87;

port[portnum] := \$40;

port[portnum] := portspeed;

port[portnum] := \$17;

portnum := port[portnum];

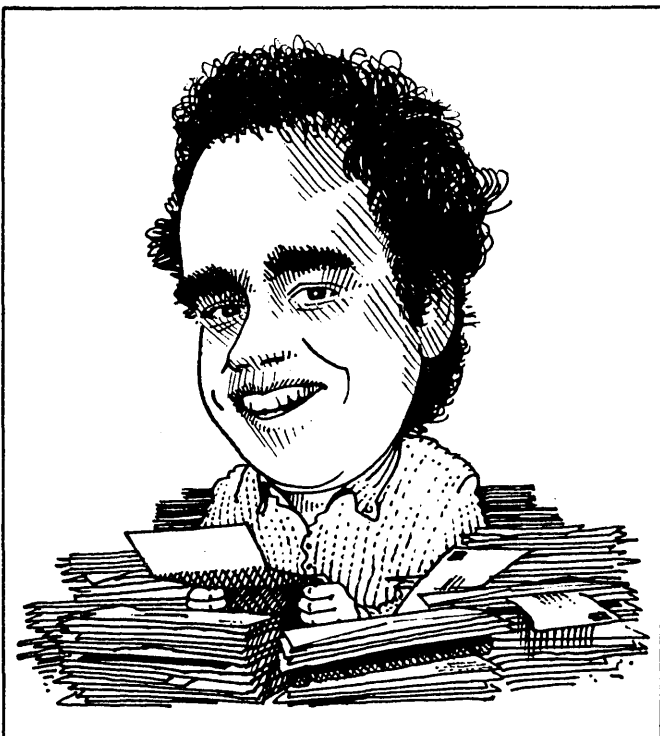
end.



NEW MUGS

Are you a Morrow user in the ATLANTA, GEORGIA area? There is a Users Group just forming there with a present membership of 20 people so far, and they are very interested in reaching more users. For more information, contact David McDonald at 5425 Windfern Ct., Stone Mountain, GA 30088; (404)969-0560 (day) or (404) 498-4197 (eve).

SEATTLE, WASHINGTON has a Users Group called SEAMUG. They have been meeting for four months on the third Wednesday of each month from 7:30 to 9:30 PM. Membership fee is \$9/year and includes a subscription to their monthly newsletter. Membership Coordinator Jack Vaughn says they already have 300 members. You can reach him at (206)527-0404. To contact the Chairperson Monty Nikon call (206)527-9203. For membership applications, write SEAMUG, 10357 Stone Ave. N., Seattle, WA 98133.



DAVID'S Q & A COLUMN

[Dave Block is Product Manager for Morrow, Inc. If you have technical problems or questions on application software, send them to him c/o MOR.]

Well, with just hours before the last and final deadline for my column (I've had 3 extensions so far), I finally have time to put pen to paper. (How's that for an outdated phrase?)

A reader writes in: I've got problems getting SmartKey and NewWord to both work at the same time. Everything works fine until I go to print a document. Am I doing something wrong, or do I have to get SmartKey out of the way everytime I go to print something?

The problem you are having is not uncommon. Fortunately there is a simple, relatively inexpensive solution. The problem arises because SmartKey takes up too much memory, not leaving enough for NewWord. To use both programs at once, you will have to get the NewWord upgrade from NewStar Software. The newest version has even more functions, and takes up less memory, thereby leaving enough for SmartKey. ##

"Cramping Fingers" asks how they can read diskettes written on a friend's Heatkit H-89 computer instead of having to type in the programs.

Well, this all depends on the format used by the H-89. Older H-89 computers used a format know as "Hard

Sectored." This simply means that there were 10 or 16 index holes in the disk instead of the one used by the Micro Decision and most other computers. If your friend's system is hard sectored, the best bet would be a serial link to transmit data from one machine to the other. If the H-89 uses a soft sectored format, then you could buy a copy of MultiForm, or UniForm. Both programs will support various Heath formats. Check with them to be sure. ##

Mark Malco, of Newport, OR wants to know a little more about the MD5 computer. His questions are:

1) Can the MD5 handle the single-sided disks generated on his MD2?

Absolutely! The MD5, (and all other Micro Decisions with double-sided drives) automatically switches between single- and double-sided format, depending on the disk detected.

2) Can double-sided diskettes written on an MD5 be read on a single-sided MD2?

Nope! But the MD5 can write single-sided format as well as double. The single-sided can be read.

3) Would any damage arise from using single-sided diskettes in a double-sided drive (or vice-versa)?

None whatsoever. ##

Until next month...Lern tu youse Correct-It!

[When I asked Dave Block to upload this column to the BAMDUA BBS he asked: "Can I do that?" I said: "Yes. And how about the Morrow RBBS? Is it up?" "No." "Will it ever be?" "Not likely." Just so you know.... --Ed.]



SOFTWARE FOR MORROW

SBACOUNT: Accounting for small business. Tracks all income & outgo, prints checks, posts chart of accounts. Prints chart of accounts, trial balance, profit and loss statement, & check ledger. Reconciles and prints reconciliation. Generates an Income & Expense journal for audit purposes. **ONLY \$79.00**

MBACOUNT: Accounting for small business. Full general ledger (20 asset, 20 liability, 20 income, 30 expense & 10 capital accounts all user assigned) PLUS all the features of SBACOUNT as above. **ONLY \$89.00**

PROFBILL: Automatic bookkeeping & invoicing for Doctors, Lawyers and other professional people who invoice at various hourly rates. Will handle up to nine partners/employees. Prints invoice or saves for future billing. **ONLY \$89.00**

MAILLIST: Mailing list, customer handling, filing program, ten data fields per customer. 8 character cust # - user (or dated program) assigned, sorts by most fields. Add, delete or modify any record. Prints all or part on 1, 2 or 3-up labels on 80 column printer. **ONLY \$59.00**

FINANCE: Personal financial program. Prints checks, posts amount to selected budget category, posts debits and deposits, prints check ledger, reconciles and prints reconciliation statement. Similiar program for charge cards. Extracts and prints list of expenditures in selected budget categories. **ONLY \$79.00**

TOUCHTYP: Touch typing course, Beginning, Intermediate & Advanced. Tests and displays typos and displays final score. **ONLY \$79.00**

STANFORM: Need to fill out standard or non-standard forms? This program generates programs for printing data in the proper location on invoices, gov't forms, insurance claims, any form that will fit into your printer. **ONLY \$79.00**

MSBCHART: Prints MICROSOFT BASIC programs, prints cross reference list of all referenced lines, prints list of variables cross referenced to each line where used. A godsend if you modify or debug Mbasic programs. **ONLY \$79.00**

Price includes disc, manual, and shipment next working day by first class mail. Mail in your order today or request detailed program listing. Better yet, if using accepted credit card, phone your order or data request to our 7 day, 24 hour phone service. Californians must add 6% to all prices.

MAP

(Visa, Mastercharge & American Express cards accepted)

(Micro-Art Programmers) Innovative Man/Machine Interface
173 Birch Avenue Cayucos, California 93430 Phone: (805) 995-2329

MBASIC is a registered trademark of MICROSOFT

“...the very best collection of utility software I’ve seen...The Kaypro is advertised as “The Compleat Computer” —but this is the bundle of software that makes that true!”

Dave Gerrold, Profiles Magazine

“After using your “Help” books, I am hesitant to purchase any software without checking to see if you have published a book on it.”

Houston, Tx.

Free Software Handbook only \$17.95!

(Handbook plus software disks \$57.95. Disks only \$49.95.)

Features the top 70 programs in public domain —

- What they are
- When they're useful
- How to acquire them
- How they work

*If ordering disks please specify machine and disk format.

Also from PeopleTalk:

Wordstar and Friends for the

Kaypro 2 & 4,

\$21.95

Perfect Manual for the Kaypro 2,

\$17.95

Perfect Manual for the Kaypro 4,

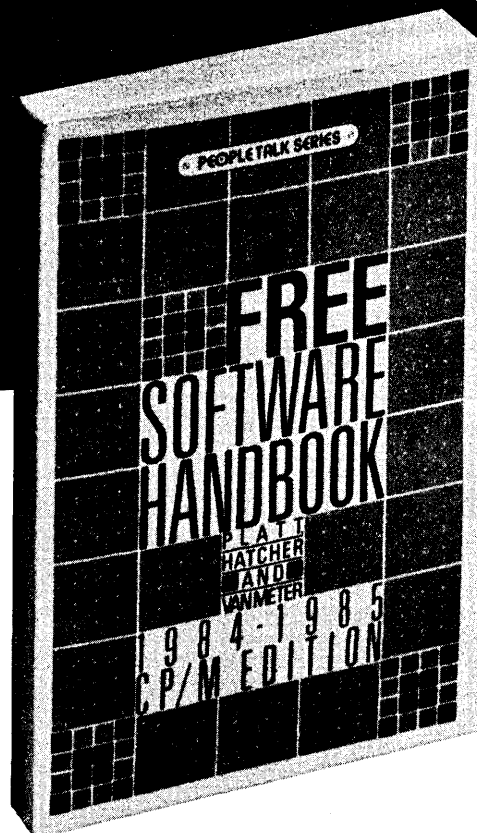
\$17.95

Supercharge your Kaypro with Smartkey!

Only \$74.95 to customize your computer. Program your own keyboard to turn your most-used commands into ONE KEYSTROKE.

Subscribe to the PeopleTalk Quarterly.

Tips, tricks, short-cuts, brainstormers. Plus a Help-line Column with answers. \$20.00 per year. (4 issues)



See your dealer or order direct:

PeopleTalk Associates Inc.

P. O. Box 863652 - B

Plano, TX 75086

214/423-4634



Please include product price in U.S. Dollars + \$3 shipping and handling (\$10 air mail outside U.S.) Texas residents add 6% tax.

SOFTWARE REVIEW

PROGRAM:	UniForm
VERSION TESTED:	Version 3.0 for MD2-MD3
AUTHOR:	Ron Proesel
MANUFACTURER:	Micro Solutions 125 S. Fourth Street DeKalb, IL 60115 (815) 756-3421
PRICE:	\$69.95

A significant problem we Morrow owners face is lack of software. What? you may ask. Many, if not most, standard CP/M programs, including vast amounts of public domain software, will run on a Morrow. Yes. But the real problem is finding them on diskettes a Morrow can read.

To deal with that problem, Morrow came up with FOREIGN.COM--a consolidation of earlier Morrow programs like XER.COM and OSB.COM--which allows reconfiguration of one Morrow disk drive to emulate (a very small handful of) other computers' drives. You can insert a diskette formatted in the other computer's disk format into the reconfigured drive on your Morrow, and use it (read data from it and write data to it) as if it were a Morrow diskette.

There are two problems with FOREIGN and its predecessor programs, though. First, the number of other diskette formats supported is very small. And, on top of that, you can't format a diskette into the other computer's format on your Morrow--the diskette has to have been formatted on the other computer first.

This is where Micro Solutions' program UniForm comes in. While various software companies have addressed these matters with programs which read, write, and format diskettes in numerous other computers' formats, before going into the merits and shortcomings of UniForm, I'd like to grant the newly created Morrow Owners' Friend Award to Micro Solutions for coming up with the most welcome idea.

Overview

UniForm allows reconfiguration of a Morrow disk drive to emulate a large number of other computers' diskette formats. It also formats diskettes in foreign formats and copies files from and to the IBM PC-DOS/MS-DOS format. Version 3.0 supports 31 non-Morrow diskette formats on the MD2; for the MD3 it supports an additional 44--a total of 75. (Versions for the MD5, MD11, MD16 and MD34 are available as of March 1, 1985.) UniForm operates in both menu-driven and direct-command modes and is distributed on a single-

sided diskette, with both MD2 and MD3 versions included on the non-copy-protected diskette.

Using It

The Morrow version of UniForm comes set up for the MD2, but can be easily reconfigured for the MD3 with a menu-driven program. This reconfiguration program is also used to install UniForm for your terminal, should you want to do so. Generally, UniForm will run with most terminals without modification, although some fiddling around may be necessary to speed up, and clean up, your display. Doing so requires some rooting around in your terminal manual for appropriate "hex codes" for various terminal matters ("Clear Screen," "Erase to end of line," etc.). For example, the display on our MDT-20 (Lear-Siegler ADM-31) got a bit messy while UniForm was running until we ran the reconfiguration program and made a couple of modifications. UniForm Version 3.0 also supports both single- and double-sided quad-density drives, making additional diskette formats available. Of course, you have to have quad-density disk drives first! (Non-Morrow versions also support 8-inch drives).

To invoke UniForm, leave the Morrow "Micro Menus" system ("Exit to CP/M"). Place your working diskette in drive A (the UniForm Manual explains how you make a UniForm working diskette). Hit Control-C and, at the CP/M prompt, type the word "uniform" (without the quotation marks) and hit Return. After a few seconds, you'll see UniForm's main menu, offering two choices: Format Selection and CP/M <--> PC-DOS/MS-DOS Copy Utility. (Users of UniForm Version 2.0, note that SETDISK and INITDISK have, in essence, been combined in the UniForm program which has one overlay file.)

Format Selection presents you with a menu of diskette formats, labeled A through Z. Displayed across the bottom of your screen are several options. Three are housekeeping options: "?" gives access to online Help; hitting Return gets you back to the main menu; the ESC key gets you back to CP/M, bypassing the main menu.

"Fmt Letter" asks you to pick a format from the menu by letter; once you have, the screen shows your choice. (Hitting the space bar will cancel your choice.) Typing a number (up to 2 on the MD2 version and up to 3 on the MD3) brings up additional menu(s) of diskette formats. Once you've picked a format, place the diskette you want UniForm to format in drive B and type Control-I (or hit the TAB key). UniForm gives you an idiot-proof message asking you to confirm that you really want to format ("Initialize" in UniForm's words) that diskette, erasing all data currently on it; if you answer "Y", UniForm will format the diskette in drive B in the format you picked. Once the formatting is complete, UniForm will tell you drive B is configured as an "XYZ" drive (the format you picked). Drive B will remain configured that way unless you tell it to turn back into a Morrow diskette, either by picking "Morrow" from the menu of diskette formats or by hitting the space bar.

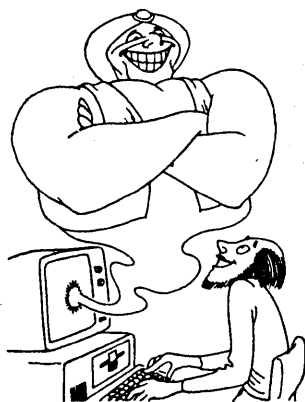
The second option on the UniForm main menu loads the CP/M <--> PC-DOS/MS-DOS copy utility, an exceptionally valuable feature. This utility allows data (files and programs) to be copied back and forth between CP/M diskettes and PC-DOS/MS-DOS diskettes. For example, you can copy a WordStar text file to a PC-DOS/MS-DOS diskette. Now you can insert that diskette in an IBM-PC or other MS/DOS computer and edit it again with WordStar (provided you have WordStar on that computer). Copying files (in both directions) is particularly easy with UniForm, since each file in the diskette directory is numbered, and you can designate the files you want copied by number or, more important, by ranges of numbers. For example, if there are ten files on the diskette you want to copy from but you only want numbers 1, 4, 5, 6, 8, and 9 copied, then you just tell UniForm to copy 1, 4-6, and 8-9.

The CP/M <--> PC-DOS/MS-DOS copy utility is also menu-driven, with additional options, such as requesting Directories, changing the CP/M disk drive and/or user area number (for computers with hard disks), and erasing files from either the A or B diskette.

It should be noted that while UniForm Version 3.0 allows formatting of IBM-PC diskettes, it does not allow you to reconfigure a Morrow disk drive to emulate an IBM-PC drive. If you want to copy to a Kaypro diskette, for example, all you have to do is reconfigure the B drive for Kaypro format, exit from UniForm and use your favorite file transfer utility (PIP, NSWEEP, etc.). Not so for PC-DOS/MS-DOS diskettes. If you want to copy to and from an IBM-PC floppy, you have to use the CP/M <--> PC-DOS/MS-DOS copy utility of UniForm. (The IBM-PC and PC-compatible version of UniForm, however, will reconfigure an IBM-PC disk drive to make it think it's a Morrow disk drive. The IBM-PC version of UniForm will not run on the current version of Pivot, but it will run on the true IBM-PC compatibles.)

While the copy utility is great for transferring text files, transferring program files doesn't make any sense--even though you can do it--because IBM-PC programs won't run on a CP/M machine. And vice versa. Period. So, just because you copied it to a Morrow diskette, don't expect Lotus 1-2-3 or dBase III to run on your Morrow. Sorry.

Once you have mastered UniForm, both the CP/M <--> PC-DOS/MS-DOS copy utility and the diskette format initializer can be operated in a direct command mode. Micro Solutions describes this as "batch processing." A single line of commands, for example, would load UniForm, pick a diskette format, and initialize your diskette, all while you go to the refrigerator.



Drawing by Fred Rhelnfrank

Performance

UniForm Version 3.0 performs in virtually all respects as promised by Micro Solutions. The addition of the superb online Help feature fills a gap present in Version 2.0. I did, however, find a couple of minor problems. First, I ran the configuration program, (impishly) telling UniForm I had an MD3, and then successfully ran it on my MD2. When I subsequently asked UniForm to format a diskette in a double-sided format, I sat and watched while UniForm happily told me it was formatting and verifying 80 tracks on the diskette in my single-sided drive! Micro Solutions reports that, while UniForm can tell if a disk has been formatted in single- or double-sided format, it has no way to tell if your disk drives are single- or double sided--suggesting you be honest with UniForm about your computer when you run the installation program.

However, UniForm does use a software check to trap a similar error in its CP/M <--> PC-DOS/MS-DOS copy utility when you try to copy from or to a double-sided diskette. If you've told UniForm you have an MD2, it reads the system tracks of the PC-DOS/MS-DOS diskette, and if it sees that the disk has been formatted double-sided, an error message tells you UniForm can't read a double-sided diskette.

The second problem I found is one that Micro Solutions has promised to fix. The CP/M <--> PC-DOS/MS-DOS copy utility requires diskette swapping at the beginning of the copy operation. The PC-DOS/MS-DOS diskette goes in drive B, and you're prompted to replace the UniForm program diskette with the CP/M diskette in drive A. However, you're not prompted to swap them back when the copy is complete. If you don't remember yourself to exchange the diskettes in drive A (removing the CP/M diskette and putting the UniForm diskette back in), you're dumped back into CP/M.

The label on the shrink-wrapper of my copy of UniForm contains a cryptic message stating "No TRSDOS Support." According to the documentation, a file copy utility (similar to the CP/M <--> PC-DOS/MS-DOS copy utility) is available for one-way-only TRSDOS/LDOS-to-CP/M file copying. However, it goes on to say, without explanation, that "Some versions of UniForm do not contain this utility because of hardware limitations for the particular model of computer." According to Micro Solutions, our Morrow is one of them--and this was not discovered until after the documentation was printed. (Nevertheless, several Radio Shack CP/M formats--that is, disk formats produced by TRS-80 computers with add-on CP/M cards, not TRSDOS formats--are shown on UniForm's formatting menus and do work.)

Finally, we'd like to see UniForm load faster. On our Rev. 2 MD2, it takes UniForm nearly 15 seconds to load from its own main menu--which can seem like all day. Micro Solutions' explanation for this is that the lengthy loading time is the result of a built-in CRC check UniForm runs on itself, verifying that all the files necessary for UniForm to operate are intact and have not been damaged in any way since the last time you used it.
(continued)

Documentation

In revising its already superb UniForm Version 2.0 User's Guide to reflect the changes in Version 3.0, Micro Solutions has wisely retained much of its surefooted, plain-American, documentation. A new Appendix on error and other messages is especially welcome. However, the separate lists of formats supported and hex codes for features of common terminals that accompany Version 2.0 are, sad to say, missing. And unfortunately, some of the new material--especially that on "batch processing" (in the new direct-command mode) needs massaging to bring it up to the level of the rest of the User's Guide.

Miscellaneous

Micro Solutions is aggressive about keeping UniForm up to date, maintaining that the program is generally available for more computers than any similar program. Moreover, the company states that it welcomes requests for new formats to be included and promises complimentary copies of upgrades to individuals who forward diskettes in formats not supported in the current version. (Pivot, anyone?) Upgrades are available to registered owners for \$18, plus \$2.50 P&H; you must return your original distribution diskette. Club discounts are available and are quite generous.

Telephone support from Micro Solutions is prompt and friendly--in the unlikely event that you might need it, given UniForm's superb documentation. With luck, you may even get to talk to Ron Proesel, who wrote UniForm. In testing the IBM version of UniForm on an IBM-XT, I ran across a problem of incompatibility with a Quadram extra-RAM card--resulting in a dead panic on my part that I had somehow made forever inaccessible 10 megabytes of important stuff on my employer's hard disk. Micro Solutions quickly explained, however, not only how to recover from the problem (whew!) but also how to modify the IBM autoexec routine to temporarily lock out the RAM card so UniForm can be used. It seems UniForm and the add-on RAM both try to load at the same memory location, resulting in keyboard paralysis--and sweaty user palms!

Conclusion

Micro Solutions' universal diskette formatting program, UniForm, can open a vast world of software for the Morrow series of computers. Despite some small problems, the program's capabilities, ease of use, superb documentation, and manufacturer support make it a Morrow Owners' Friend and a fine buy at \$69.95.

[Another file transfer program, called MultiForm, also supports hard disk machines and has an MS-DOS copy utility. It is manufactured by Bartholomew Software (see ad) and is distributed by several Morrow Users Groups through a discount plan. If you know of a group that distributes MultiForm, let us know and we will print that information. We plan on running a review on MultiForm by Tim Evans in the next issue. --Ed.] ■

\$49

MasterCom

FOR TELECOMMUNICATIONS

MasterCom is a full featured, smart terminal and file transfer utility for Morrow and other CP/M computers and all IBM PC-DOS compatible computers. It is easy to use for the beginner, yet has the features and speed for the advanced user. No long training is required. You will be communicating immediately using the descriptive pull down menus.

We are so enthusiastic about MasterCom that we provide a 30 day money back guarantee. If you don't like it, return it!

MasterCom can:

- Make your system a terminal to a HOST bulletin board or time sharing system (such as Dow Jones, Compuserv, WestLaw, etc.).
- Capture data onto your disk and/or printer from the HOST.
- Send text and program files to almost any type of computer.
- Exchange any type of file using error correcting protocol with another **MasterCom** or Xmodem Protocol equipped computer.

MasterCom includes the following features: auto-dial, auto-answer, host mode unattended operation, directory display, batch transfer, file viewing, file rename, file erase, wild card file specification, stored responses invoked by a single key stroke, filter or ASCII display option for received control characters, on-line selection and revision of communication parameters.

MasterCom supports most file transfer protocols, including Christensen XModem, Xon/Xoff, line at a time (time delay or handshake) and speed throttle.

MasterCom is available in most disk formats. A single user license is \$49. COD, prepaid, MasterCard, Visa and authorized purchase orders accepted. U.S. orders are shipped UPS surface (\$5) or UPS air (\$7). International orders shipped airmail (\$10). Same day shipment on most orders. Call our software HOT LINE:

906/228-7622

The Software Store

706 Chippewa Square
Marquette MI 49855

BOOK REVIEW

TITLE: The CP/M Plus Handbook
248 pp.

AUTHOR: Alan R. Miller

PUBLISHER: SYBEX, Inc.
2344 Sixth Street
Berkeley, CA 94710

PRICE: \$15.95

If you are running CP/M Plus (CP/M 3.0), I'd like to recommend an excellent book. The CP/M Plus Handbook presents a wide spectrum of information ranging from tips helpful for a beginner to hints useful to the serious operator. Besides having a lot of good instructional material, it's an excellent reference book for those of you who are using your Morrow in a small business, engineering, or writing application, and frequently find yourself working in the CP/M operating system. It's a great aid when you're doing such things as duplicating, clearing, organizing, and protecting files or programs. I have been using CP/M 2.2 for several years and CP/M Plus for about a year on my MD11 and have found this to be the best general purpose CP/M text anywhere.



Drawing by Fred Rheinfrank

What makes it so good you might ask? Mr. Miller's book takes away much of the pain and anguish involved with using the Digital Research/Morrow CP/M books by explaining things thoroughly and by using understandable examples like "B:PART1.TXT[V]" instead of "...{d:}{filespec}...[options]...". The index is quite complete, and there is a 56-page Quick Reference to CP/M Commands and Programs. This is almost all you need.

It also has 38 pages devoted to commonly used commands, such as all the different ways to use SET, DIR, SUBMIT, SHOW, etc. And it has an entire chapter devoted to all the uses for PIP. With introductory chapters, moderately advanced chapters, and appendices, the book is 248 pages of very worthwhile information. I highly recommend it to all Morrow Owners using the MD5, MD11, and other MD hard disk machines. ■

CHUCK ATKINSON makes money and inventory management easy with new QUICK CHECK PLUS® and QUICK REGISTER®



...the greatest
programs on earth
for small businesses
and professional
people!

"It is fabulous...
the best software I've ever had."

Dr. George Yama,
Pulaski, Virginia

New

QUICK CHECK PLUS (QC+)

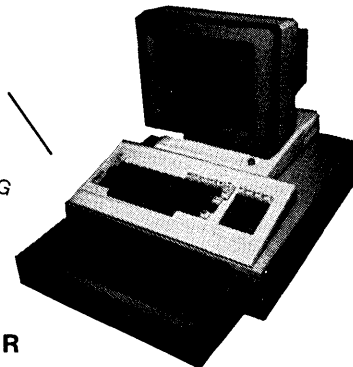
This program makes money management easy, even for those without accounting or computer experience. It includes book-keeping, checking, accounts payable and accounts receivable. It will show income, expenses, balance, and pay records at the touch of a button. The program loads and runs in a flash.

QUICK CHECK PLUS, \$195.

QUICK REGISTER including RETAIL INVENTORY PROGRAM (RIP)

QUICK REGISTER (POINT OF SALE) turns your computer into a very special cash register. Enter the quantity and item number of each sale, and the computer records the sale, prints the invoice, and adjusts the inventory! RIP lists the inventory several ways instantly. It takes care of inventory control, purchasing, labels, and keeps track of vendors.

QUICK REGISTER with RIP, \$395.



For the name of your nearest dealer, write or call:

CHUCK ATKINSON PROGRAMS

Route 5, Box 277-C • Benbrook, Texas 76126 • (817) 249-0166

SUBMIT TO LESS WORK!

by Kenneth J. Grymala

[WARNING for CP/M 2.2 users (MD2, MD3): Most of the information in this article pertains to the SUBMIT version used with CP/M 3.0 (MD11 and other hard disk machines). But some of it will also apply to the CP/M version. Keep in mind that not all the examples given below may work for you. In addition, be sure you have SUBMIT.COM and XSUB.COM on the disk in drive A. Lastly, the XSUB facility will not work properly with some programs called by means of the submit file (.SUB). Explore and report back. --Ed.]

You can spare yourself a lot of unnecessary key strokes and much aggravation by using SUBMIT.COM. It's a wonderful utility program that comes with CP/M--and you already own it.

SUBMIT.COM is known as a "batch processor," which is a carry over term from the old computer days when you needed to "submit your projects for processing." In simple terms, SUBMIT.COM allows you to use your word processor to write simple programs to automate a series of steps that you would otherwise have to execute individually each time you needed them.

For instance, you can use SUBMIT to automatically load the right KEY translation program each time you change programs. Or, if you're using a hard disk Micro Decision (MD5, MD11, MD16, etc.), SUBMIT can be programmed to automatically transfer the AUXDICT.TXT utility of Correct-It back to a system file in User 0 --where it belongs--rather than into your current user area where Correct-It would otherwise put it. You can even program SUBMIT to change your terminal's characteristics.

There are two versions of SUBMIT.COM. The CP/M 2.2 version is used with the MD1, MD2 and MD3; Version 3.0 is used in the Micro Decisions with the hard disk. With CP/M 2.2 you must first type the word "SUBMIT" before a SUBMIT program will run. (Of course that means you have SUBMIT.COM on the disk you are logged onto.) However, with CP/M 3.0, SUBMIT programs run almost like ".COM" programs. All you have to do is type the name of the SUBMIT program, and unless there is a .COM program by the same name, it will run immediately.

Saving Keystrokes When Booting Up

One place SUBMIT is very helpful is when first booting up. I use it to do a series of steps that I would otherwise have to do manually. For instance, let's take a look at START.SUB, a program I wrote to use when I first boot up WordStar on my MD2:

```
QK LOAD WSKEY.DAT
STAT B:*. *
B:
(example cont.)
```

```
A:WS
QK LOAD DEFAULT.DAT
```

Let me describe what I've done here. When I first boot up, or press the reset button, my Quick Key keyboard translation program loads the WordStar keyboard information (QK LOAD WSKEY.DAT). Since I always put my files on drive B, I've programmed to get a full STATUS of B (STAT B:*. *). Then I set drive B as the default drive (B:). The program then tells the computer to load WordStar from drive A (A:WS). When I exit WordStar, the SUBMIT program loads my Default keyboard translation data (QK LOAD DEFAULT.DAT), which is tailored to CP/M.

To write START.SUB, use NewWord or WordStar in the non-document, "N", mode, and make sure that you put a "hard" carriage return (press the Return key) after every line. To get START.SUB to autoloading, put a copy of AUTO.COM on your disc. Type "AUTO SUBMIT START", and a carriage return.

If you're using a hard disk machine, things are even a little easier. For example, let's start where the computer starts. If you take a look at CP/M 3.0, you'll find a file called PROFILE.SUB (CP/M 2.2 doesn't have this) which is the very first thing that the computer looks for when it is turned on or reset. This file contains the following lines:

```
setdef *,a:[order=(com,sub)]
pilot go
```

The "setdef" in the first line tells the computer to "set the default search path." When you decide to run a program, the "*" tells the computer to first look on the disk drive in use, in case you're logged onto the floppy instead of the hard disk. If the program isn't there, then the "a:" tells it to look on drive A. The "[order=(com,sub)]" tells it to first look for a program name with a ".COM" ending. If it doesn't find this, it still looks for that program name, but ending with ".SUB", which is a SUBMIT program. The second line of this short program tells it to run the PILOT program named "GO", the main program of the PILOT menus.

When I got my MD11 I got rid of the "pilot go" line, so that I could boot up directly to the operating system. I also added a command that stopped the very annoying blinking cursor on my MDT-60 terminal, and I added a line to load my DEFAULT.KEY program. All this was done by editing PROFILE.SUB with NewWord, and modifying it in the Non-Document mode. (Note: After you modify it, make sure to SET it back to a SYSTEM file by typing "SET PROFILE.SUB [SYS]"). My PROFILE.SUB now reads:



Still Searching For Files Without **EUREKA!**TM ??

You may not know it, but a disk cataloger can be a big help in managing your computer files. Why not go with the best? **EUREKA!** is a terrific time saver for ...

- Lawyers
- Software Developers
- Writers
- Teachers
- Project Managers
- Accountants
- Researchers
- Secretaries
- Consultants
- Journalists

People who try **EUREKA!** love it....

"Just started cataloging with comments - Great idea" GR-MI
 "Great time saver in locating material on disks." WB-NY
 "Your manual is the best written I have ever seen." MT-NS
 "We finally chose **EUREKA!** ... largely because it has the ability to read comments directly from a file ... **EUREKA!** is easy to learn and use, has more access and report choices, finds files by many different ways, and has an attractive price."
 T. Bove & C. Rhodes, USER'S GUIDE No. 11

EUREKA! the popular CP/M® disk cataloger

Still only \$50

MENDOCINO SOFTWARE COMPANY, INC.

Dept. MR-1
 P.O. Box 1564
 Willits, CA 95490
 (707) 459-9130

add \$2.50 shipping
 Calif. residents add 6% sales tax

VISA & MasterCard
 accepted

EUREKA! is a trademark of Mendocino Software Company, Inc.
 CP/M is a registered trademark of Digital Research, Inc.

A simple DATABASE program for MORROW owners!! **ALIST ALIST ALIST ALIST**

ALIST features include:

- Variable record length files.
- Up to 10 fields per record.
- Up to 254 characters per field.
- Powerful search features:
 GT, LT, EQ, NEQ, contains, does not contain, more.
- Search on 1 to 64 AND/OR conditions.
- Only requires ONE disk. (MD-1 owners rejoice.)
- Easy to learn and easy to use.
- Resides on ONE floppy disk. (Not 12 like the pearl).
- Text editor, does not require a separate word processor.
- User definable output to disk, printer or screen.
- Wordstar/Mailmerge compatible.
- Menu driven.
- User friendly instruction manual.

Minimum Requirements
 CP/M, 48K and 1 drive.
 Satisfaction Guaranteed

Send orders to:
 IRATA - ALIST
 2562 E. Glade
 Mesa, Az. 85204
 (602)-892-0015

\$39.95

includes disk
 manual & shipping



```
setdef *,a:[order=(com,sub)]
^[2
key default
```

The "^[2" is the command that changes that blinking MDT-60 cursor into a non-blinking cursor. (See Footnote*.) The "key default" line tells the computer to run my DEFAULT.KEY program before it dumps me to the operating system and gives me the familiar A>. My DEFAULT.KEY program is a modified version of the one shipped with the hard disk Micro Decisions. I have set it up to use the function keys for a few special purposes--one of them to easily load frequently used programs and to use a few other special keys.

I've also set up SUBMIT files on my MD11 that automatically load the correct key definition and the program I want to run. When I exit that program, DEFAULT.KEY will be executed before putting me back to CP/M. As an example, if I type "NW" from any user area, first NW.KEY and then NewWord itself are automatically executed and, when I exit NewWord, it again automatically runs my DEFAULT.KEY program. To examine how this works, let's look at my program called NW.SUB:

```
key nw
key default
```

Simple, isn't it! But you may be wondering why NW.COM didn't load when I typed "NW", and why I didn't seem to give the command to run NewWord. That's because I call my version of NewWord "NW1.COM". If you've been using the KEY programs provided by Morrow, you also know that they will load the program name that appears on the first line, starting with an "*". A partial listing of my NW.KEY program is shown below for illustration purposes. As you can see, it will load a program called NW1.COM.

```
;FUNCTION KEY DEFINITIONS FOR NEW-WORD
;WITH MDT-60
;Last Modified Aug 10, 1984 by Ken Grymala
*NW1.COM
UP ^E
^UP ^Z
^UP ^R
DOWN ^X
^DOWN ^W
```

If you refer back to my NW.SUB program, you'll see that my DEFAULT.KEY program is told to run again before going back to the operating system. Then I'm all set to run my next program.

Giving Automatic Answers

This next example will show how you can use SUBMIT to give answers to queries within programs.

I frequently use Correct-It. One problem I had when I first started with my MD11 was that when the

Footnote*: For changing terminal attributes, refer to the excellent article "Deciphering Your Terminal Manual," by John Vanderwood, in the December 1984 issue of MOR (Vol 1, #5).

Auxiliary Dictionary "learned" new words, its file AUXDICT.TXT was never put back into User Area 0 as a SYStem file. Instead, it placed AUXDICT.TXT into whichever user area I was currently working in, leaving it as a DIRectory file rather than a SYStem file. (The important point here is that a SYS file in A0 is accessible from any user area, whereas a DIR file in A0 is not.) And I had an additional problem--since I always use Correct-It the same way, I wanted to eliminate repeatedly answering some of the questions. The program I wrote to deal with these problems is called CHECK.SUB:

```
CORRECT $1
<C
<C
SET AUXDICT.TXT [SYS]
PIP A: [G0]=A:AUXDICT.TXT[VR]
```

This program resides in User 0 as a SYStem file. If I want to run Correct-It on a file named TEST.DOC, I'd type "CHECK TEST.DOC". The first line would tell it to run Correct-It on a file named TEST.DOC, the substitute for the "dummy parameter" \$1 which reprints a string of characters--in this case TEST.DOC.

On the next two lines we see the "<". This means that if the program running asks for an input, then give it what is on this line. In this case, Correct-It begins by asking questions about proceeding; my first answer is always "C", for "Correct File XXXXX.XXX." In response to the next questions on how I want to correct the file, I always answer with "C" for "Correct unknown words interactively."

The next line SETs the Auxiliary Dictionary file, AUXDICT.TXT, back to a SYStem file from a DIRectory file. And the last line copies the updated Auxiliary Dictionary to User Area 0 from the user area I'm working in. The "[G0]" means that it should go to User area 0. In the "[VR]" the "V" means to verify that it got there safely, and the "R" indicates that it is a system file rather than a DIRectory file. Now the Auxiliary Dictionary is again ready for use from any other user area.

Conclusion

As you can see, there are many possibilities for using SUBMIT. I have been able to reduce many multi-input or multi-keystroke entries to just one or two keystrokes. I use SUBMIT when formatting disks, running special directories, sending commands to my printers, and a whole lot of other things. I even use a simple "P" to PARK my hard-disk head when it's time to quit.

If you would like to have more information about SUBMIT or CP/M, and you can't seem to decipher the CP/M books that came with your computer, I recommend a couple of other books. If you have an MD1, MD2, or MD3, an excellent reference is CP/M and the Personal Computer by Dwyer and Critchfield, published by Addison Wesley. If you have an MD5, MD11, or other hard disk Micro Decision, I would suggest The CP/M Plus Handbook, by Alan R. Miller, published by Sybex. ■

Get the Proportional Printing Program which

REALLY WORKS!

PropStar gives type-set quality true proportional spaced printing from unmodified NewWord and WordStar document files. Prints on daisy-wheel printers with ps type-wheels, including Diablo, Gume, NEC, Brother, C-Itoh, Juki, Silver-Reed.

PropStar is a stand-alone program, not a patch to your w.p. program, gives higher quality print than modified WordStar. **PropStar** follows the rules for typesetting, maintains correct spacing between letters, never crowds text in short lines or lines with many caps. **PropStar** increases letter spacing in "bold" text to avoid run-together letters. **PropStar** doesn't move text from one line to another, you get what you see on your w.p. screen. **PropStar** supports most WordStar and NewWord print features.

Available on CP/M 8" and 51/4" formats including MD-2/3/11. MS-DOS version comes on 51/4" PC media. Only \$ 49.95, Visa & M/C accepted, or send check with order and we pay postage. Specify computer and printer models.

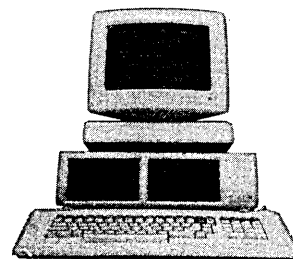
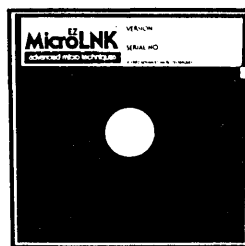


CIVIL
COMPUTING
CORPORATION

2111 Research Drive, Suite I
Livermore, California 94550

(415) 455-8086

WORLDWIDE COMMUNICATIONS WITH YOUR MICRO DECISION™ OR PIVOT™



Micro²LNK™ connects your Morrow to Western Union's EasyLink network for access to anyone, anywhere in the U.S. or abroad.

Micro²LNK gives you:

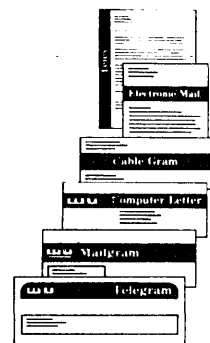
- Automatic connection, formatting and transmission.
- Built-in text editor.
- Directories of addresses.
- Automatic message retrieval.
- Message storage/printing.

All for \$95; try it out for \$20

For more information and a free sign-up with EasyLink, call:



1291 E. Hillsdale Blvd. Suite 210 • Foster City, Ca 94404 • (415) 349-9336



SAVING TIME IN SUPERCALC WITH X(eXecute)

by Don Roszel

Many of you are familiar with the SUBMIT facility in CP/M. There is actually a similar facility in the SuperCalc2 programs called the X(eXecute) command. (Everything in this article also pertains to SuperCalc.) For those of you who have SuperCalc2 but have not yet explored this command, the following article may save you some time in the day to day usage of your spread sheet.

I use SuperCalc2 primarily for household budgeting and so have established a .CAL file for each of many budget categories. Included in this list are: files for the current and prior months of two checking accounts, files for each of our revolving charge accounts, files for each of the mortgages (we own a small rental property), several files which bear on tax-related items (such as medical expenses, charitable contributions and the like), as well as one file for each month's "budget," which is an attempt to bring together all of our monthly expenditures in one place. Additionally, there are a variety of other programs and utilities which I like to keep on the same disk with SuperCalc2, several of which occupy a fair amount of disk space.

Consequently, there is barely enough space on one disk for all the information I like to have available while running SuperCalc2. My solution to the problem had been to segregate all my .CAL files on a separate disk, which I keep in the B drive, while SuperCalc2 resides on the disk in the A drive. However, that solution was a cumbersome one. Each time I wanted to load a .CAL file I had to do a lot of typing:

"/ZY"	[To clear (Zap) the screen of the current file]
"/LB:filename,A"	[To Load the .CAL file from drive B]
"!"	[To recalculate for all new entries]
"/SB:filename,O,A"	[To Save the just worked upon file, <u>O</u> verwrite the old file, and save <u>A</u> ll of the new file]

Then I discovered the X(eXecute) command which enables me to perform all of the above functions easily and simply. (This /X command is fully documented in the User's Guide & Reference Manual that came with your SuperCalc2 program.) To begin with, you have to create what is called an .XQT file to contain the string of commands. You can use either WordStar or SuperCalc2 to accomplish this, but editing the files is easier with WordStar. As an example, suppose you have on the B disk a spreadsheet file called MORT1.CAL. You now create a companion file on the A disk called MORT1.XQT. Using WordStar, you enter the following four lines into this file:

```
/ZY
/LB:MORT1,A&
!
/SB:MORT1,O,A
```

Now suppose you have a whole set of .CAL files that you want to process during one SuperCalc session:

B:MORT1.CAL	B:MEDICAL.CAL
B:MORT2.CAL	B:CHECK1.CAL
B:BUDGET01.CAL	B:CHECK2.CAL

In the same way as you did before, create a .XQT file for each of the .CAL files above. Place those .XQT files on the A disk with SC2.COM. Now at the A> prompt, invoke SuperCalc2 as follows:

```
A>SC2 MORT1
```

SuperCalc2 will now load your file, MORT1.CAL and give you the message, "Awaiting keyboard entry." (It does this by means of the command "/LB:MORT1,A&".) Now you can enter data on the freshly-loaded spreadsheet. After you have made your entries, type the command "&", and SuperCalc2 will recalculate the spreadsheet and then save it, overwriting the old MORT1.CAL file.

Now you can go on to the next spreadsheet, say B:BUDGET01.CAL, by entering the SuperCalc2 command "/XBUDGET01". The current spread sheet will be zapped (/ZY), all of BUDGET01.CAL will be loaded. Again, "Awaiting keyboard entry" appears on the screen, and the whole process repeats itself. ■

COMPUTER PHOBIA?

Many people harbor a fear of computers. Jeff Berner deals with that in his book Overcoming Computer Fear (The Computer Clarity Group, Inc., Box 5503, Mill Valley, CA 94942.) In this little 92-page book, he first shores up whatever meager confidence his readers may have by advising: "Don't let computers intimidate you. They don't feel one way or another about you, because they are the dummies. Give yourself a chance. The combination of yourself and a computer will amaze and delight you...without you a computer is nothing, nothing, nothing!" Then in direct, conversational style, he translates technical jargon into plain English, introducing the reader to computer literacy, tips on choosing the right machine, and making you feel at home with this frightening stranger. Fearless Morrow users won't need this book anymore. But why not give it to a less fortunate friend?

MEX—A GREAT PD MODEM PROGRAM

by Dee Pourciau

[MEX and MODEM7 are examples of public domain (PD) programs that can be used to control a modem. A modem is what you need to communicate over the telephone line with another computer that is also equipped with a modem. Your computer can act as a terminal to the remote computer, and in addition you can transfer files back and forth, error-checked and all. Modem programs are essential in obtaining free (public domain) software from many sources like CompuServe and the countless Remote Bulletin Board Systems (RBBS's) all across the country. To learn about MODEM7 read the tutorials in *User's Guide*, (Vol. 2.5/2.6, Dec 1984), Box 5245, Redwood City, CA 94063. To learn about MEX, read the article below. --Ed]

MEX is "yet another modem program" but with a difference! In its simplest form and usage it differs little from MDM7XX (that is, MDM730, MDM740, etc.), the more familiar public domain modem program. It does all that MDM7XX does - and does it perhaps a little better, depending upon your personal tastes. On the positive side, it is a little faster; and on the negative side, it is a bit more complex. If all you want are the basics for occasional downloading and message exchange, the two programs are very much on a par. However, if you want a challenge then MEX is for you!

MEX was developed and placed in the public domain by Ronald Fowler of Fort Atkinson, Wisconsin. It is a very comprehensive communications program which allows the user to tailor the operation of the program to personal tastes. The program has the capability of reading and responding to command files--which when set up properly can simplify operations enormously. For instance, I have mine set up to do several tasks: Log on to the B drive (I keep the program and many utilities on the A drive and use the B drive to hold downloaded files, messages, etc.); provide a directory of the B drive with space remaining; print a message reminding me to set up a "capture" file (no longer necessary as I'll explain later); set my Hayes modem to 18 sec. wait to receive the called modem carrier; and, with the latest version, set up a "capture" file and enable capture. All of this without doing anything other than calling up the program in the normal manner.

The usual procedure for up- or downloading files may also be automated. In my case, instead of going through the `Xmodem S FILENAME.TYP` and then the `R FILENAME.TYP` to download a file, I type "get FILENAME.TYP" and MEX does the rest. The same with downloading one file from a library. Instead of typing "Xmodem L libraryname FILENAME.TYP" followed by "R FILENAME.TYP", I type "Getlib libraryname FILENAME.TYP" and MEX takes over. Saves a few keystrokes, improves

accuracy, and is fun to watch. I'll show you how it's done below.

First a summary of the features:

*The PHONE command allows phone numbers to be entered into the phone number library or removed from the library. The phone numbers are called by using mnemonics--up to 12 characters long. MEX does not allow any information other than the phone number, its corresponding call mnemonic and an optional baud rate to appear in the library. Thus it differs from MDM7XX in which a number is called by entering its corresponding letter or numeral; that entry can also contain a name or descriptor corresponding to the number. It's also possible to use one letter representations for the phone number in MEX, which I do for frequently called numbers.

The baud rate corresponding to a particular number may also be set when the phone number is entered into the library. I find this particularly handy since I usually use 1200 baud for local communications, but I most often use 300 baud for CompuServe because one spends so much time waiting around. However, if you wish to download a file from CompuServe and you know exactly how to get it, 1200 baud is probably more economical. So I also have CIS12 in my library which calls the same number but at 1200 baud.

*The KEY command enables creation and editing of multiple character key strings allowing two keystrokes to send out a string of characters. The total length of all strings (together) is 400 characters. I use the strings for my CompuServe log in procedure--to declare my ID #, password, etc. In addition, I use it for certain RBBS commands such as "DIR *.* \$U0ADLN" which I can never type right the first time.

*The LOAD and SAVE commands allow phone and key-string libraries to be saved to or loaded from disk.

*The READ command acts very much like the CPM submit. It allows the automation mentioned above.

*The SENDOUT command allows strings to be sent out usually under the command of a READ file.

*The STAT command provides for the modification of many options which enable tailoring the program to the user's requirements.

*The HELP command provides access to a large HELP file which is available from within the program.

*The CLONE command provides the means for saving any changes made to the phone or keystring libraries and to the options provided by the STAT command. When CLONE is called (filename required), a copy of the program under that filename is saved on disk along with the phone and keystring libraries and STAT options as set at that time. Thus it is possible to have several versions of MEX available for different purposes, and also to modify the program easily at any time.

*The CIS option (set by STAT command above) allows file transfers using the CompuServe protocol in addition to the normally used MDM7XX (Ward Christensen) protocol. CIS is very handy for those who use CompuServe a lot for acquiring Public Domain Software.

The MEX documentation covers all these facilities in detail, so I'll go on to describe how I've used the READ and SENDOUT commands to automate initialization and up- and download files, and a few other little things.

First, the initialization: If the STAT variable INITFILE is set to ON, the first thing MEX does when called is to look for a file labeled INLMEX. In my case the file looks like this:

```
STAT SEARCH 2
ALT A0:
STAT REPLY 0
SENDOUT "ATS7=18^M"
STAT REPLY 8
B:
DIR
TYPE A:DEE.NTE
TERMA SESSION.LOG
```

Let's take these one at a time.

STAT SEARCH 2 - sets up a file search procedure which causes MEX to first look for a requested file on the currently logged drive; and if not found, the alternate drive is searched.

ALT A0: - defines the alternate drive as A:

STAT REPLY 0 - defines the length of time in seconds MEX will wait for a reply after completing the SENDOUT message. In this case, since the SENDOUT message is to the modem, no reply wait is necessary.

SENDOUT "ATS7=18^M" - Sends the message in quotes which causes the Hayes modem to reset the number 7 register to 18 seconds from the default value of 30 seconds. This saves a lot of time in auto redial. (^M is a carriage return.)

STAT REPLY 8 - Resets the reply wait time to the normal 8 seconds.

B: - Sets drive B: as the default drive.

DIR - Calls up the B: directory and displays the space available on B:. This can save you from trying

to download a 50K file when there is only 10K of space available.

TYPE A:DEE.NTE - Prints the file DEE.NTE which provides a reminder to set up a "capture file" to provide a log of the session. If you would just as soon set up a capture file at every session, this can be eliminated by the following line.

TERMA SESSION.LOG - Sets up a capture file named SESSION.LOG in the APPEND mode and initiates copying into the file.

Neat?

The GET command takes care of a complete procedure for the downloading of a file (FILENAME.TYP) from a remote computer. The complete command is: GET FILENAME.TYP. The GET command expects a command file, called a GET-file, in order to know exactly what to do. It looks like this:

```
WRT
STAT WTECHO ON
SENDOUT "XMODEM S {1}"
STAT WTECHO OFF
TYPE A:CAPON.NTE
R B:{1}
TA SESSION.LOG
```

In the above, FILENAME.TYP will be substituted for {1}.

WRT - closes the file SESSION.LOG which has to be done before a download or it is lost.

STAT WTECHO ON - causes MEX to wait for the receiving computer to echo the transmitted character before transmitting the next character. MEX's character transmission rate is too fast for some systems. Setting "wait for echo" on ensures proper receipt by the remote system.

SENDOUT "XMODEM S {1}" - sends out the string XMODEM S FILENAME.TYP (FILENAME.TYP having been included on the command line as GET FILENAME.TYP). Remember, the command was: GET FILENAME.TYP.

STAT WTECHO OFF - turns "wait for echo" off.

TYPE A:CAPON.NTE - prints the file CAPON.NTE which reminds me to turn the previously closed capture file back on. This is not necessary if the TA command below is included.

R B:{1} - tells MEX to get ready to receive the file requested by the SENDOUT command above on the B: drive

TA SESSION.LOG - reopens the file SESSION.LOG and causes the information to follow to be appended to the existing SESSION.LOG file.

The GET-file which is used to download a file from within a library is similar, but it also allows for the

library and file definitions. The complete command could be: "GET FANTASTC.LBR FILENAME.TYP". This GET-file looks like this:

```
WRT
STAT WTECHO ON
SENDOUT "XMODEM L {1} {2}"
STAT WTECHO OFF
TYPE A:CAPON.NTE
R B:{2}
TA SESSION.LOG
```

As you can see, this GET-file is the same as the one described above except for the SENDOUT and R lines. The library name is substituted by MEX for the {1} above and the file name for the {2}.

I have several other files: Q.MEX which sends ATM0 to the modem to shut the speaker down when repeat dialing, NSY.MEX which turns the speaker back on by sending ATM1, SLOW.MEX which sets the wait for carrier to its default value of 30 seconds, and FST.MEX which sets it back to the 18 seconds mentioned above.

In order for all of the above procedures to work, the STAT variables below have to be set as shown.

```
EXTEND ON
SILENT ON
INITFILE ON
TRIGGER "Ctl @" (This is "null" set by typing
                "STAT ESC")
```

The program is distributed with the ESC character set to "Ctl J" which is line feed. I find it more convenient to use "Ctl I" or tab. The method of changing the ESC character is described in the documentation.

MEX is accompanied by a fairly complete set of overlays, including ones for several varieties of modem. The procedure for incorporating the overlays is very well explained in the documentation. One very important caution: I found the Micro Decision overlay MXO-MD10.ASM (or AQM) not to work with my MD3 Rev. 1. The CONOUT address, found toward the end of the overlay, had to be modified from 0F38AH to 0F20CH which is the proper address for CONOUT on the MD-3 Rev. 1. The address may be different on other models and revisions. It may be determined by running CPMADR.COM which gives a list of the addresses used by your computer. Also there is an MD2 vs. MD3 option, found early in the listing. In order to get the overlay to work with my MD3, I had to set the option to MD2. Somebody may have been a little confused when the overlay was written. In any case, after making these changes the program runs beautifully.

MEX with its documentation and help files, and the associated modem and computer overlays takes up well over 100K of space and is available on many RCPM systems. MDM7XX may be used to download MEX from your friendly neighborhood RCPM. (MDM7XX does not seem to object to this.) The latest version of MEX is 1.12 (as of February 1985). Do not--repeat do not--try to use

MEX version 1.10. It does not work--at least not on my MD3. I spent several frustrating hours trying. MEX Version 1.0 works and can be used if 1.12 is not available. Documentation of the program is very complete, but I find it a bit hard to understand in some areas.

I have not by any means covered all the ramifications of MEX. In the first place, I don't yet understand all of them; and in the second, I'm sure I wouldn't be allowed the space if I did. However, the program is well supported and you will find various files on the RCPM's, usually in the same area as the primary program, which contain helpful hints from others about how to make the most of MEX.

The development of the program and the documentation represents a fantastic amount of work on the part of Ron Fowler, and all of us who use the program owe him a very big vote of thanks.

[Note from Andy Adler: A commercial version, to cost about \$100, is due soon. Also, the automated use of the program often isn't as smooth as he implies. A good summary of MEX's document file is MEXEASY.DOC, available from many RCP/Ms and other sources. CompuServe, which is less expensive to access than a RCP/M for many users, is probably the best source of up-to-date versions of the program (including ones already configured for various machines). Of course, the number one source is Ron Fowler's own RCP/M, Fort File Fone Folder, but it's nearly always busy (and I think he's about to adopt a 1200 bps-only policy.) --Ed.] ■

SOFTWARE SOLUTIONS

SPECIALIZED DATA BASE MANAGEMENT PROGRAMS
for
MORROW MICRO DECISION COMPUTERS

Single-Disc, Menu-Driven Alternatives to the PEARL

ADDRESS AND PHONE BOOK PLUS COMMENTS. PB+ is a specialized, menu driven, data base management program for listing names, addresses, phone numbers, and a line of comments. There are routines for entering, deleting, correcting, searching (for last name, city, state code, zip code, area code, or a word or phrase in comments) alphabetizing by last name, sorting by zip code, printing to screen or to printer (all the data or just mailing labels). Ways to modify this program for your special needs are included in the MANUAL.

Other Data Base Management Programs Available:
Album List (keep track of your record albums, books, tapes, etc.), Record (phonograph) List, Note Pad (keep and retrieve notes on anything), Address and Phone Book (without comments), Vocabulary (list and search for words and definitions; used by translators and for word drills). We will also CUSTOMIZE programs for you. Programs are also available for IBM-PC/XT.

SEND FOR CATALOG!
Satisfaction
Guaranteed!

KCS SOFTWARE
927 Mears Court
Stanford, CA 94305
(415) 493-7210

TIMETR^K

The INTERNAL REVENUE SERVICE requires you to keep "ADEQUATE, CONTEMPORANUS RECORDS" if you plan to deduct the business use of your computer. Let TIMETR(c) take the drudgery out of keeping those records. MENU DRIVEN, FAST, EASY TO USE. Use it year after year to make tax-time easier.



\$29.95



Plus shipping

BARGAIN CORNER

Get all the help you can to prepare for next year's tax season!! Use TIMETR and TAXTRK. A spread-sheet version of TAXTRK is now available to help you get ready for next year. Accumulate information and know your tax status at a glance. GET BOTH for the DISCOUNT price of \$59.95 (we pay shipping)

ORDER NOW FROM:
FINANCIAL TRACK SYSTEMS
9208 GUTIERREZ RD. NE
ALBUQUERQUE, NM 87111

SEVEN DAY/24 HOUR PHONE SERVICE

(505)243-8975

FINANCIAL TRACK SYSTEMS INC

“ We Explain Software Packages,
Then We Teach You How To Use Them. ”

You have a Morrow or similar computer, but you don't have time to read large manuals or go to computer stores to see demonstrations. *User's Guide* can help you get the most from your computer and find out more about software packages. You won't need to spend money on training classes or spend time looking for demos.

For the low cost of a magazine subscription (\$21), you get six issues stocked with tutorials and software reviews (\$4.50 each on the newsstand). No fluff, just direct useful and readable information for users.

Available back issues of *User's Guide* teach you how to use the most popular software packages on the market including WordStar, SuperCalc, dBASE II and Modem7. Current issues report on income tax preparation, data base management, free software and telecommunications.

Try a year of *User's Guide* as an on-going training seminar. Make your computer investment profitable for only \$21 a year.

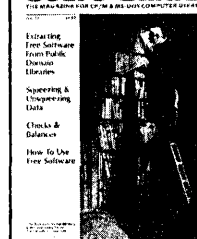
“ ...worth more than it costs. ”
Jerry Pournelle, *BYTE*

User's Guide

P.O. Box 5245
Redwood City, CA 94063
(415) 364-0108

User's Guide
TO CP/M SYSTEMS & SOFTWARE

User's Guide
THE MAGAZINE FOR CP/M & IBM PC COMPUTER USERS



Indicate Offer and Length of your *User's Guide* subscription:

Take Advantage of the Low Price

for Enclosing Payment Now!

☐ I enclose \$21 for 6 issues

☐ I enclose \$40 for 12 issues

☐ Foreign: (prepaid US \$): Canada & Mexico \$27/six issues, overseas \$40/six issues (airmail).

Payment by charge card: ☐ Visa ☐ Mastercard Exp. date _____

Phone: (415) 364-0108

Card # _____

Or, try our no-risk bill-me offer and cancel if not satisfied!

☐ Bill me \$25 for 6 issues

☐ Bill me \$45 for 12 issues

Interbank # _____

Signature required: _____

Name _____

Company _____

Title _____

Address _____

City, State, Zip _____

☐ Check if you do not want promotional mailings.

Make checks payable to *User's Guide*. Offer expires 12/31/85

MOR1

Subscription Dept.: P.O. Box 5245, Redwood City, CA 94063.

Please allow 6-8 weeks for processing.

THE MORROW TOOLBOX

by David Mintie

[WARNING: Don't perform these operations on any machine still under warranty. (For owners of Revision 1 machines this is probably not a problem.) If you don't have experience soldering on an integrated circuit board, you can do irreparable damage. Ask someone who knows to give you a hand. --Ed.]

For household repairs a good toolbox and basic know-how are indispensable. So too for minor repairs on your Morrow. For example, have you ever bought an MM300 modem and then been frustrated to discover that you also needed an external power supply because you own a Revision 1 Micro Decision? And you can't even take advantage of those dealer specials on the modem/software combination.... Or have you ever had your favorite key on the keyboard suddenly stop working in the middle of a project? No need to despair. The following article will tell you how to deal with these two problems.

The Morrow MM300 modem is unique in that it was designed to run off the internal power supply of the Rev. 2 MD, using a 12-volt line terminating at the printer/modem port. The problem with using the Rev. 1 board is that there is no power directed to the modem port. Here's how to fix that.

TOOLS REQUIRED:

- * Phillips Screwdriver
- * Wire strippers
- * VOM (Volt-Ohm meter)
- * 30-Gauge jumper wire
- * 25-Watt soldering iron
- * Solder

1. Disconnect all power and remove the MD Case.
2. Carefully remove both disk drives, detaching the power lines and data cable that you'll find connected to the drives.
3. Remove the cables that connect the power supply to the "motherboard" and the two wires that connect to the reset light LED (Light Emitting Diode).
4. Turn the computer upside down and carefully remove the retaining screws for the power supply box. (Hold on to the box with one hand when you do this, so it does not drop.)
5. Remove the motherboard from the MD case with extreme care.
6. Locate the solder connections for the printer/modem port. These are located on the underside of the board which is wave-soldered. (See Figure 1.)

7. Solder a jumper wire from pin #9 on the solder connector to the +12-volt line. The pins are numbered from right to left, with pin #1 located at the bottom right of this connector. (Figure 1.)

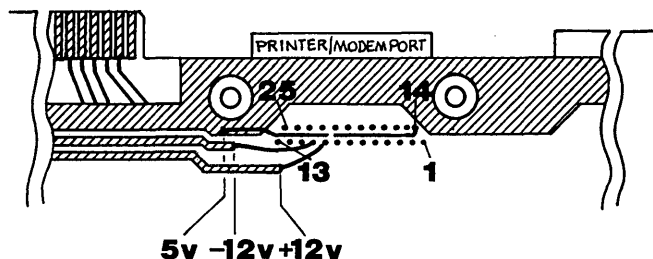


FIGURE 1

8. Solder a jumper wire from pin #10 to the -12-volt line.
9. Solder a jumper wire from pin #14 to the +5-volt line.
10. Now, connect the power supply to the board and use your VOM to check for correct voltages on the RS232 connector before reassembling the computer. (See Figure 2 for the pin-outs on the RS232 connector.)

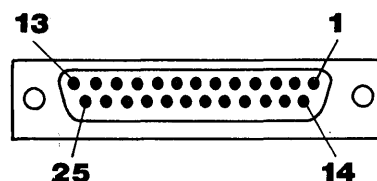


FIGURE 2

11. If everything checks out alright, reassemble the computer by reversing the procedures in steps 1 to 5--and make tracks for your nearest supplier of the MM300 modem. I've heard you can pick them up for as little as \$100 in some cases. When you consider the free software that comes with it, that's a pretty cheap price to pay to go "on line" with the world.

[You can now buy the same modem from CTS, including MITE modem software, for \$99. In addition, you can buy the modem power supply as a separate item from them, in case you don't want to do the soldering job--although my preference is also to use the power supply of the computer itself. Address: CTS Corporation, 400 Reimann, Sandwich, IL 60548, (815)786-8411. --Ed.]

(continued on next page)

Keyboard Breakdown

I've received desperate letters and telephone calls from members of my Users Group (CMDUG) who have had problems with their keyboards and called their dealer only to find out they'd either gone out of business or wanted to charge them \$300 to repair or replace the keyboard. Calling the factory will only get you the latest price on a new terminal.

There are not too many moving parts in your Micro Decision. That's why, in part, it's fairly dependable. As the adage goes--where there's movement, things break...and so it is with keyboards. The keys that are most likely to go first are the "shift" and "enter" or "return" keys. Functionally, it doesn't matter which terminal you have, all the keyboards are constructed in pretty much the same manner. This repair procedure applies to all of them, so the methodology will be kept purposely simple.

TOOLS REQUIRED:

- * Soldering iron
- * Solder
- * De-soldering tool
- * Phillips screwdriver
- * "Chip puller" or narrow flat-blade screwdriver

1. Unplug the terminal, disconnecting all power.
2. Using the chip puller, pull the offending keycap off by lifting it up vertically. If you don't have a

chip puller (less than \$1.00 at Radio Shack), use a narrow flat-bladed screwdriver--very judiciously. Don't hack up the surrounding key caps.

3. Using your Phillips screwdriver, remove the keyboard case and lift out the PC board that holds all of the key switches. As you can see, all the switches are of the same momentary contact type.

4. Note the bad key, turning the PC board upside down to locate the point where the "feet" to the key are soldered directly to the PC board.

5. Next, heat up your soldering iron and get your "de-soldering" tool ready. The de-soldering tool will "suck up" the heated and flowing solder allowing you to remove the key.

6. A replacement key should cost in the neighborhood of about five bucks, available at most electronics stores. If you live in a remote area and cannot find a replacement, use one of your unused function keys. (For those who own a Liberty terminal, forget about trying to get a replacement key out of the factory. They will just try to sell you a replacement keyboard.)

7. Solder in the new key, and insert the PC board back into the keyboard case. Refit the key cap itself--and you've done it!

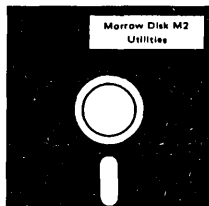
[Thanks to: "CMDUG Newsletter" (Connecticut), Jan/Feb 1985, Vol. 3, #1.)

```
*****
*                               MultiForm-READIT, FORMAT, & COPYDOS                               *
*                               *                               *                               *
*                               MultiForm allows you to read, write, and format multiple disk formats *
*                               on the Morrow Micro Decision (MD1, MD1E, MD2, MD3, MD3E, MD3P, MD5, MD5E, *
*                               MD11, MD16, and MD34 models). *
*                               *                               *                               *
*                               With MultiForm, you can copy files to and from different CP/M, MS-DOS, *
*                               and PC-DOS disk formats. MultiForm can currently read, write, and format *
*                               disks for over 40 CP/M computers. *
*                               *                               *                               *
*                               MultiForm's capability to read, write, and format MS-DOS and PC-DOS *
*                               disks means you can transfer information to and from: *
*                               *                               *                               *
*                               1. An IBM-PC *
*                               2. Morrow's CP-88 co-processor board *
*                               3. Morrow's PIVOT portable computer *
*                               4. Any MS-DOS machine that is disk compatible with the IBM-PC *
*                               *                               *                               *
*                               ----- *
*                               Price: U.S. and Canada: $64.95 ($59.95 + $5.00 shipping/handling) *
*                               Foreign orders : $69.95 ($59.95 + $10.00 shipping/handling) *
*                               *                               *                               *
*                               Visa, MasterCard, check, money order, and C.O.D. orders accepted *
*                               ----- *
*                               For information or to order, contact: *
*                               Paul Bartholomew *
*                               Bartholomew Software *
*                               1563 Parkside Court *
*                               Freeport IL 61032 *
*                               (815) 235-1352 *
*                               *                               *
*                               MultiForm is no longer available *
*                               through Computer Review, Inc. *
*                               ----- *
*                               Dealer and Users Group discounts *
*                               available. *
*                               *
*****
```

Micro Cornucopia

The Single Board Systems Journal

MORROW USERS DISKS



Micro Cornucopia is drawing rave reviews as the technical journal with style, but Micro C, as we like to call it, is more than just a magazine.

Micro C is also a central exchange of software that people have written or modified for their systems and from these contributions we have put together the following Morrow disks (186K format).

MICRO CORNUCOPIA

P.O. Box 223
Bend, OR 97709



(503) 382-8048

Morrow Users Disks \$12⁰⁰ each

The following are full disks of software assembled specifically for the Morrow.
Each program has a .DOC (documentation) file and many come with source.

Morrow Disk M1 Modem software

This disk is absolutely priceless if you will be using a modem to communicate with bulletin boards, other micros or mainframes.

MMODEM: Morrow version of MODEM 795. You can change your baud rate inside the program. Includes source and library so you can customize it if you wish.

S.MODEM: This is MODEM7 setup for SMART-MODEM compatible modems. Handles autodial and autoanswer.

SQ/USQ: Programs to squeeze and unsqueeze files for faster transfer.

Morrow Disk M2 Utilities

Really oodles of spiffy little (and big) programs to help you get full use of your Morrow.

ZESOURCE.COM: A true Zilog format disassembler for 8080 and Z80 object(.COM) files. Now you can turn .COM files into .MAC files.

UNERA.COM: Simply enter "UNERA" followed by the name of the file you just erased and presto, the erased file is back! A lifesaver.

FINDBD54.COM: Checks an entire disk, reports bad sectors, and then creates a special file containing those sectors. You save a bundle on disks.

CAT2: This is a group of programs which create and maintain a single directory of all the programs you have on all your disks. Even keeps track of which programs are backed up and which aren't.

DUMPX, DU-77, COMPARE, FORMFEED, DIR-DUMP, ... and all have documentation on disk.

Morrow Disk M3 Games

PACMAN.COM: Despite the Morrow's lack of graphics, this one looks and plays amazingly like the real thing! Keep it hidden.

ZCHESS.COM: Chess with a 1-6 level look ahead.

OTHELLO.COM: You learn it in minutes, master it in years.

BIO.COM: Generates custom graphic biorhythm.

MM.COM: Master Mind.

WUMPUS.COM: Classic wumpus hunting.

ADVENTURE.COM: This is the famous 550 point super version of Adventure. There isn't room on one disk for this program and all the data files (the cave is huge) so the data files are on Disk M4.

Morrow Disk M4 Adventure Data & Aliens

ADVT.DAT: This disk contains the data files for the 550 point Adventure (the latest, greatest, most cussed version ever devised by half-mortals). You must have both M3 and M4 to play Adventure.

ALIENS: This is the game that made arcades famous. Keep this one hidden from the younger set or you won't get to play Adventure.

Morrow Disk M5 MX-80 Graphics

A complete Epson MX-80 graphics printer package including example files. Same as M6 except for MX-80 (or compatible) printers.

Morrow Disk M6 Prowriter Graphics

This is a complete Prowriter printer graphics package written by the same Micro C subscriber who wrote the MX-80 graphics package. Plot points, lines, circles, boxes, and more. Examples, documentation, and more.

Morrow Disk M7 Small C Version 2 Compiler

This is a greatly extended version of Ron Cain's Small C compiler. Version 2 has more expressions and larger library, true subset of Unix C. Disk contains compiler, documentation, and library—everything you need.

Morrow Disk M8 Small C Version 2 Source

This disk contains the source (written in Small C) of the Small C version 2 compiler. Get M8 if you want to try extending the compiler. (You must have M7.)

Morrow Disk M9 ZCPR

ZCPR: The big news on this disk is the self-installing version ZCPR available only from Micro C. Once you have ZCPR in your CP/M, you'll never go back to straight CP/M! For instance, ZCPR searches drive A for any program not found on drive B, so, even an empty disk in drive B appears to contain every program on A. It's great for text editors, compilers, etc. Plus many more new features to make CP/M easier to live with. In fact, Digital Research incorporated many features of ZCPR into CP/M 3.0.

EX14: a super replacement for SUBMIT.

Morrow Disk M10 Assemblers

We've received a lot of requests for a Z80 assembler. So Dana put in some long hours getting the Crowe Z80 assembler to run on the Morrow (and every other Z80 machine).

CROWECPM: This is a first class Z80 assembler. We use this assembler daily (and we included its source). Takes standard Zilog mnemonics.

LASM: This is a more powerful version of the ASM assembler you received with the Morrow. This will link multiple programs together at assembly time.

PRINTPRN: This program makes it easy to print the listing files generated by the Crowe assembler.

Morrow Disk M11 Library & Checkbook Programs

CHECKS: This has been a very popular group of programs. Categorizes checks so you can keep track which are tax deductible and which get charged to which projects. Includes source and excellent example check files. Very powerful.

LIBR: This is a complete set of library routines which let you group files into a single file called a library. Then CP/M sees them as a single program, but with the library routines, you can list them out separately, run them separately, or divide them up again. Almost like a unix environment.

Morrow Disk M12 Pascal Compiler

This is a real Pascal compiler. It supports only a subset of the language (no records, pointers, booleans, reals or complex) but it generates a real .COM file. Everything is on this disk: the compiler, its source, example programs and documentation.

Morrow Disk M13 Z80 Tools

This is for those of you who are into Z80 assembly language.

XLATE.COM: A very good 8080 to Z80 translation routine.

DASM.COM: An easier to use version of ZZSOURCE (the Z80 disassembler). This full disk includes source and documentation for both routines.

NEW! Morrow Disk M14 Z80 Macro Assembler

This is a real Z80 macro assembler! Syntax closely follows RMACK and MAC. Also includes pseudops to support conditional assembly, etc. No phase or relocatable code.

AUTOMATIC FORMATTING WITH PILOT

by Charles T. Tart

When you do a lot of writing, disks fill up fast, and all too soon it's time to break out a new box and format them. If all you do is format them, it takes about one and a half minutes at the keyboard from one double-sided disk to the next. Almost all of this time is spent watching the machine work, and there's little else you can do. And besides, if you're like me, you'll want to add other useful things to your disks--such as the public domain FINDBAD (see Footnote*) program to lock out any bad sectors before they give you trouble, SYSGEN.COM to make each disk a systems disk, and useful utilities like PIP.COM. Then it takes almost four minutes per disk at the keyboard.

Here's a PILOT program that will do all of the above for each disk, completely automatically. (PILOT is part of the software that came bundled with your computer.) It takes three minutes per disk to run and then summons you with a beep, so you can wander off to do some other small tasks while it's running. My thanks to Syoko Andrae who gave me the idea of working out a PILOT program for this.

Use the non-document mode ("N") in WordStar or NewWord to type up the following AUTOFORM.PIL file on your systems disk. This program requires your disk to have FORMAT.COM, SYSGEN.COM, PIP.COM, PILOT.COM and FINDBAD.COM on it. If it doesn't have any of these particular programs, be sure to delete the corresponding lines when you type in AUTOFORM.PIL. Note: Type in the CP/M commands exactly as I have them, including all commas, colons, spaces, etc., or else AUTOFORM.PIL may not run.

*START

T: This program automatically formats a new
T: disk, as well as testing for bad sectors
T: and locking them out, putting the utility
T: PIP on the disk, and SYSGENing it.

(Program continued)

T:

T: Press RETURN to begin
T: or X to EXIT this program

INMAX:1

A:

M: X

JY: *END

R: This is for double sided disks: replace the

R: D below with an S if that's not the case

R: for your system.

CPM:FORMAT B D|

R: The symbol to the right of the D is the

R: vertical line key on your keyboard: mine

R: shows one vertical line above another.

T: Disk is formatted and verified, now checking

T: for bad sectors and locking out any that are

T: found....

CPM:FINDBAD B|

T: Now putting the PIP utility on the new disk...

CPM:PIP;B:=A:PIP.COM;

T: Now SYSGENing it....

CPM:SYSGEN;a;b;

BELL:

T: If you want to format another disk this way,

T:

T: FIRST, remove one just done and put in a new

T: one,

T: THEN press RETURN

T:

T: If you are through, press X

INMAX:1

A:

M: X

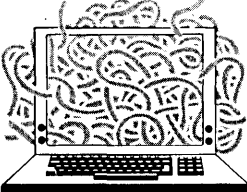
JN: *START

*END

END:

To execute this PILOT program, first exit from the Morrow "Micro Menus" system (select "Exit to CP/M). You will now see the A> prompt on your screen. Now, to format a disk, put your systems working disk in drive A. Put the disk to be formatted in drive B. Now at the A> prompt, type in: (without the quotes) "PILOT AUTOFORM.PIL". When the program asks if you want to format a disk, press return. Then do whatever you want for the next three minutes or more until you hear the beep from the keyboard (BELL:), indicating that it's time to format the next disk. ■

[*FINDBAD.COM is a public domain program available from many clubs (BAMDDA Library Volume #2) or most Electronic Bulletin Boards, as well as companies such as PeopleTalk Associates and Micro Cornucopia (see ads). --Ed.]



CHECKS 1.4

- Continuous check printing
- Report sort on user defined categories
- Report sort on deductibles
- Maintains list of accounts, addresses & account numbers
- Maintains list of standard monthly payments
- Password security
- Searching, reconciling, & archiving facilities
- Ideal for small business or individual

All tangled up in red tape?

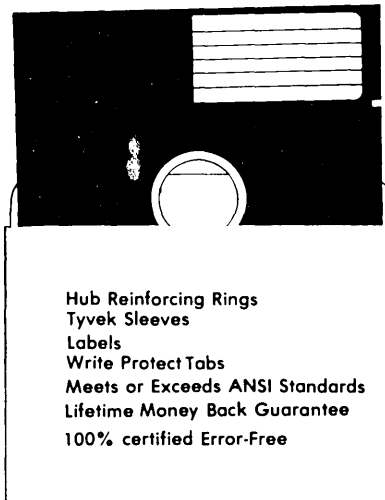
Let Checks 1.4 un-complicate your home or business records & increase productivity.

CP/M-2.80, PC DOS, MSDOS Formats
\$69.95 Disk and Manual
\$ 5.00 Manual Alone

For further information or orders:
FUTURE COMMUNICATIONS
210 West Denson Street, Atlanta, Georgia 30030

CLASSIFIEDS

FOR SALE: MD5-E with CP/M 3.0, Backfield, NewWord, Correct-It and a bundle of PD software: \$1500 (no terminal), MDT-60 terminal \$250. Used less than one month. Sytko Andreae, (415) 654-3798 lv mesg.	MORROW MDT 20 LEAR SIEGLER ADM 20: Limited number of new terminals for sale \$400 each. 110 and 220 volt models available. Limited 30 day refund only. Calif. res. add \$26 tax. Jacobs Computer Services, P.O. Box 415, Pinole, Calif. 94564. (415) 724-601.
MULTILINGUAL ARITHMETIC acts as an interpreting calculator for numerical calculations and sequences in French, Spanish, German or English. Translates numbers up to one million. \$29.95 plus \$2.00 S&H from INTERNATIONAL COMPUTER PRODUCTS, 346 No. Western, Los Angeles, CA 90004	MICRONIX too slow? Jacobs Computer Services has RAM DISK SOFTWARE for your Decision 1. For single user CP/M only. Hardware remains able to run Micronix later. (Ram disk and Micronix won't run at same time.) \$200. Demo \$25. For info write P.O. Box 415, Pinole, Calif. 94564. (415) 724-6015
DAILY REMINDER is a year-round computerized notebook and appointment calendar for home or office. Monthly calendar highlights important events; features daily printouts. \$39.95 plus \$2.00 S&H from INTERNATIONAL COMPUTER PRODUCTS, 346 No. Western, Los Angeles, CA 90004	AUTOCOM for Morrow S100 and Decision 1 CP/M Cbios (revs. E.3, E.31, E.4) allows you to easily make CP/M execute a command when cold booting and/or same/different command when warm booting. \$50. Calif. residents add \$3.25 tax. Jacobs Computer Services, P.O. Box 415, Pinole, Calif. 94564
PASCAL MANUFACTURING PROGRAMS - Inventory, Work Orders, Bills-of-materials, Where Used Listings, and parts usage Forecasting. MD3 DEMO DISK with manual, \$25.00 postpaid; All PROGRAMS \$500.00 (\$25 demo disk credit). C.A.B. Enterprises, 7474 W. Roxbury Pl., Littleton CO 80123. SASE for info.	Add-on disk drives for MD3. Teac Double-Sided, Double-Density. Includes Power Supply, chassis and cabling. Instructions and 90 day warranty is also included. If interested, contact or write Donald Kelly at (408)257-7255 c/o CTH Design Inc., 10381 S. DeAnza Blvd. Ste. 205 Cupertino, Ca. 95014.
Compu/CHART will show your stocks' position in the market before you trade. Easy menus & prompts. Buy and sell points, last trade, comparisons. \$99.95 + \$3.00 shipping. \$6.50 CA sales tax. NewTEK Industries, P.O. Box 46116, Dept. R, Los Angeles, CA 90046. (213) 874-6669	NEW UNITS: MD1w/MDT50 Term \$500; MDT20 Term \$175; Decision I (D200) \$2400; MP200 Parallel Printer w/Tractor \$300. Cromemco C10SP \$500; Columbia Data 1600-4 Hard Disk w/Term \$2500; Panasonic KX-P1090 Serial Printer \$175. ALL w/warranty. Software w/CPU's. Fred Lins 316-792-5102 after 6pm CST
MORROW MP100 - For Sale - \$300 ppd (or best offer) w/Morrow cable, 3 printwheels, 4 ribbons, org pkg & instrcts. (used 11 mos) (602) 326-9527	BASIC PROGRAMMERS: BASICREF generates cross-ref. listings of BASIC programs (ASCII or tokenized). Customizable processing. Up to 10x faster than available public domain programs. CRT/file/printer output. US\$19.95 (Foreign add \$5). IBM PC & CP/M 5.25". LTA, 7 Ledge St., Stoneham, MA 02180
FOR SALE: MD3 SYSTEM WITH FABULOUS DAISY WHEEL PRINTER. NewWord, Correct-It, Personal Pearl, LogiCalc. Basic. Quest. DTC 380Z printer (just like Daisywriter 2000): 32 c.p.s., 48K buffer. Less than 1 year old. \$2300. Steven Goldberg, 65 Clark St., Newton, MA 617-965-7939	P3 - POSTER PRINTING PROGRAM Any poster, Any Characters or String, Any Size or Combination (.5 to 8"), Any Printer, Any (almost) Computer - Runs on Basic. Disc-\$24.95, Manual w/listing-\$7.50, Sample-stamped envelope. Basic Home Computing, PO 141, Blauvelt, NY 10913
DOUBLE YOUR PLEASURE! Let us replace your slow, noisy MD-2 single-side drives with new fast, quiet double-side drives. All installation and patches done in our shop for \$350 plus tax & shipping. Civil Computing Corp., (415) 455-8086, 2111 Research Drive, Suite 1, Livermore CA 94550.	CP/M PUBLIC DOMAIN SOFTWARE: One disk containing Utilities (NewSweep, Unerase, Library utilities, Smodem, etc., and documentation) and another disk containing Games (Aliens, Pacman, Chess, Othello, Startrek, etc.) Two for one. Send \$12 to ABS, P.O. 296, Crows Landing, CA 95313. In CA, add 6% tax. (continued)
Morrow S100, DECISION 1, and CP/M consultation and hardware repair. \$60 per hour. Jacobs Computer Services. Phone (415) 724-6015.	



MEET PLAIN JANE

(quality media at wholesale prices)

Now you can buy Name Brand
Quality Diskettes at Wholesale Prices

ALL THAT PLAIN JANE LACKS IS FANCY PACKAGING

SSDD-\$1.59 DSDD-\$1.99

AVAILABLE IN BOXES OF 50 DISKETTES ONLY

QUANTITY PURCHASE? WRITE FOR QUOTE.

COD's: CASH or CASHIERS CHECK ONLY



ORDER TOLL FREE
1-800-851-2753
ILLINOIS (call collect)
309-833-1157

Integrated Computer Systems
129 North Randolph Street
Macomb, Illinois 61455

LIST OF ADVERTISERS

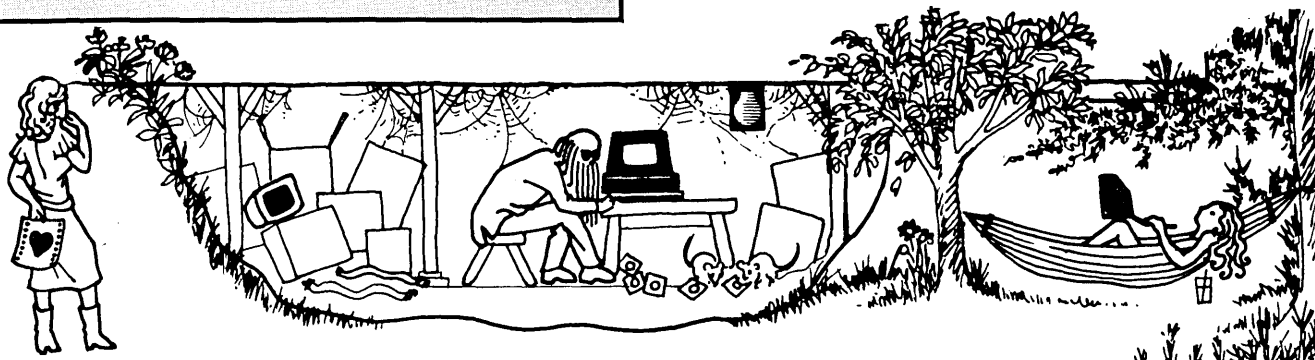
Advanced Micro Techniques	29
Bartholomew Software	36
Borland International	inside front cover
Central Computer Products	14
Chuck Atkinson Programs	26
Civil Computing	29
Compusophic Systems	outside back cover
English Enterprises, Inc.	9
Financial Track Systems	34
Future Communications	38
Goodnight Designs	19
Integrated Computer Systems	40
Irata	28
James River Group	4
KCS Software	33
Mendocino Software Company, Inc.	28
Micro-Art Programmers	21
Micro Cornucopia	37
Micro Ease, Inc.	12
O'Neill Software	17
PeopleTalk Associates, Inc.	22
Practical Business Software	10
Software Techniques	19
The Software Store	25
Users' Guide to CP/M	34
Westwind Computers	inside back cover

(Classifieds, cont.)

FREE DATA BASE MANAGER : Smart Checkbook - Tracks 52 Expense Accounts, Tax Deductions, and reconciles automatically. Electronic Rolodex - includes mailing label generator. Electronic Calendar with memo pad. All free with the purchase of 30 DSDD Diskettes @ \$1.90 ea. Call: PCS (415) 387-9647

WOODY KHOMAN of the CP/M-Bangkok Users Group....
WHERE ARE YOU? You wrote MOR about starting a bulletin board and asked about list of Morrow UGs. We can help you, but when you write next time leave a return address in your letter so we can get back to you. Write MOR, attn: Sypko.

MALE COMPUTER BUFF still seeking female hackster. Long-distance modem calls accepted collect, but no voice please. Age irrelevant but 1200 baud smartmodem essential, 2400 preferred. Do not send photo--ever. Instead, leave E-Mail for **SEEKING BUFF** at any RBBS. Anyone? Please?





We Support Your Decision

Trantor Systems Quality Products for Your Computer

Hard Disks 11 MBYTE
 23 MBYTE
 35 MBYTE
 47 MBYTE

Available with 5 MBYTE removable
cartridge. (As shown)

The WEB™ Network
Converts up to 4 computers into
a powerful network with your
Trantor Hard Disk.

From \$1295 complete.

Both with full support software, cables and 6 month warranty

WestWind
C O M P U T E R
FORMERLY DRIVE C & TRANTOR

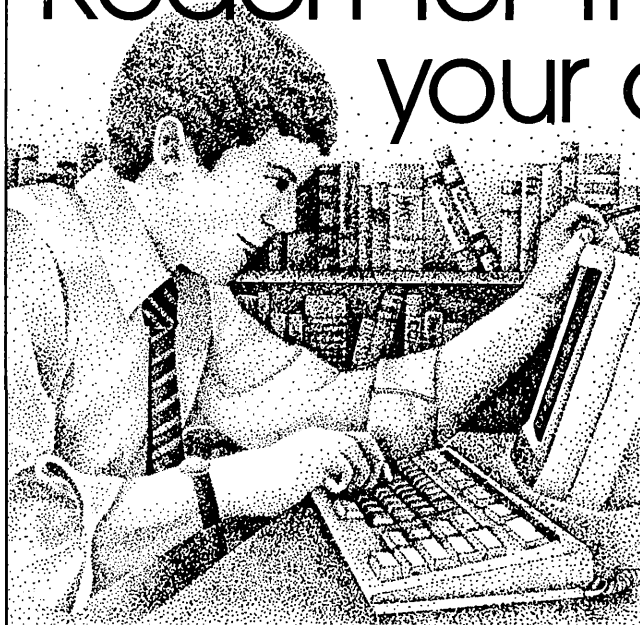
Order toll-free USA (800) 526-6500
CA only (800) 831-3144

1690 65th Street Emeryville, CA 94608, (415) 652-3222
Telex: 756329 (DRIVE C UD), WU EASYLINK 62533500.

MORROW OWNERS' REVIEW
P.O. BOX 5487
BERKELEY, CA 94705

Bulk Rate
U.S. Postage
PAID
Golden State
Direct Mail

Reach for the height of your craft...



As an idea craftsman, you use your mind like a skilled pair of hands. You take hold of concepts, then manipulate them to discover, refine, convey dynamic new thoughts.

Now, the tool that can strengthen your creative grasp is well within your reach.

KAMAS™, a revolutionary outline processor from KAMASOFT*, supports your thinking process and keeps you in touch with your ideas. That's because KAMAS is designed to work the way your mind works—naturally.

Begin by brainstorming. KAMAS enables you to jot down ideas quickly, as you think of them. If you want to elaborate, you can add text with full screen editing. Then develop your ideas using a familiar outline format. Change the structure as easily as you change your mind. Move an idea and all attached text moves with it.

KAMAS puts full control at your fingertips. You can keep track of your main line of thought by collapsing the details from view. Then, expand the outline to develop the specifics when you need to. By collapsing and expanding portions of the outline, you can maintain an overview and literally see how your ideas fit together.

And KAMAS is fast. Your ideas remain at your fingertips. KAMAS can locate and retrieve by keyword—even a misspelled one—in less than a second per topic file.

Use as much of the power as you feel comfortable with. KAMAS is menu-driven with over 100 on-line help screens. But you can also open the hood to find a high performance programming environment with the additional horsepower you may need to get the job done. An active user community and the KAMAS Report newsletter keep you in touch with the latest KAMAS applications.

Achieve a commanding vantage point...

KAMAS, Z80, & CP/M are trademarks of KAMASOFT*, Zilog, & Digital Research respectively.
* formerly Compusophic Systems.

Get your hands on KAMAS now. Send \$147 plus \$4 for S/H. Or call (503) 649-3765 for VISA or MasterCard orders. KAMAS is available for many Z80, CP/M computers. Ask about your system.

KAMASOFT*
2525 SW 224th Ave., Dept. 161
Aloha, OR 97006

...with **KAMAS**™